

SULLYS HILL NATIONAL GAME PRESERVE

FT. TOTTEN, NORTH DAKOTA

1971

NARRATIVE REPORT



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Sullys Hill National Game Preserve
Fort Totten, North Dakota 58335

Substation of Devils Lake Wetland Management District

1971

United States Department of the Interior
Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife

Sullys Hill National Game Preserve
Fort Totten, North Dakota

Narrative Report for Period January 1 to December 31, 1971

Devils Lake Wetland Management District

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Sullys Hill National Game Preserve

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Roger McKay	6/21 - 7/6/71
Billy Tomahawk	6/21 - 7/7/71
Tim Demarce	6/21 - 7/20/71
Curtis Young Bear	6/21 - 8/11/71
Ron Walkingeagle	6/21 - 8/12/71
Ronnie McKay	6/21 - 8/16/71
Tim Chaske	6/21 - 8/17/71
Ralph Abraham	6/23 - 9/16/71
Jessie McKay	7/20 -

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I. GENERAL

A. Description of the Area.

Sullys Hill National Game Preserve consists of 1,674 acres of primarily large, wooded hills, located on the south shore of Devils Lake in North Dakota. The largest of the hills was named for General Alfred Sully, who in 1865 led a campaign against the Sioux of this area.

Established as a national park in 1904, the preserve is rich in Indian and military history. Eight Indian burial mounds on the preserve are thought to be over 600 years old. What is now the big-game pasture provided logs in 1867 and clay bricks later for the building of Fort Totten (one mile west). The fort is now a state historical park.

Primary emphasis in management of the preserve is placed on outdoor education and wildlife-oriented recreation. Public use during 1971 totaled 54,573 visitors, most of whom used the self-guided auto tour route through the big-game enclosure. Summer big-game herds during 1971 totaled 41 buffalo, 30 elk and about 35 white-tailed deer. The 60-acre Sweetwater Lake recreation area contains picnic grounds, a 1-mile nature trail and a 12-acre lake with a display flock of native waterfowl.

At the end of 1969 Sullys Hill officially became a substation of the Devils Lake Wetland Management District.

B. Weather.

The year began with 7" of snow on the ground. January was colder than normal with an average temperature of -30°. Subzero temperatures occurred on 26 days of the month. Several periods of mild weather were experienced during late February and March but general thawing did not begin until March 27. April was mild with no late snowfalls as occurred in 1970. The last frost of the spring was recorded on May 11.

Precipitation was near normal until May when only .38" of rain fell, 1.73" less than normal. June rains totaled 5.35" and more than made up the May deficit. July precipitation at the Devils Lake weather station was below normal but unofficial records showed .7" more than normal fell at the preserve. Summer temperatures were about normal with only six days of 90°+ temperatures, all in August. The dry weather of August ended with 3" of rain recorded at the preserve on September 4-5. A heavy frost occurred on September 18 and ended the growing season after 129 frost-free days, one day less than in 1970.

Winter got off to an early start with more snow in October than fell in November and December combined. The first snow fell on October 16 but the ground was not covered until almost 7" fell on October 30-31. Near blizzard conditions existed on the 30th. Most of this snow melted during November and the year ended with only 2" of snow on the ground after below normal snowfall during November and December.

1971 WEATHER DATA*

	Max.*	Min.**	Mean	Precip	Snow	Norm	Depart
Jan.	34	-33(-35)	-3.0	.93	13.1	.53	+.40
Feb.	47	-24(-31)	11.6	.14	1.9	.37	-.23
March	53(56)	-10(-13)	22.4	.95	9.0	.77	+.18
April	83	4	42.2	1.04	.7	1.15	-.11
May	83	32	54.2	.38	2.1	2.11	-1.73
June	86	40	64.9	5.35		3.36	+1.99
July	91(88)	44(40)	65.0	1.49		2.57	-1.08
Aug	98(95)	42	68.8	1.20		2.18	-.98
Sept.	89	31(25)	56.4	2.07		1.70	+.37
Oct.	68(66)	18	45.3	2.75	6.5	1.07	+1.68
Nov.	51(46)	-4(-7)	25.8	.17	1.7	.68	-.51
Dec.	37	-18(-20)	9.5	.15	2.8	.49	-.34
	98(95)	-33(-35)	38.6	16.62	35.7	16.98	-.36

* Official records from U.S. Weather Bureau station at Devils Lake, 11 air miles NE of Sullys Hill.

** Temperatures in () are unofficial records collected at Preserve headquarters that vary appreciably from official records.

C. Habitat Conditions.

1. Water.

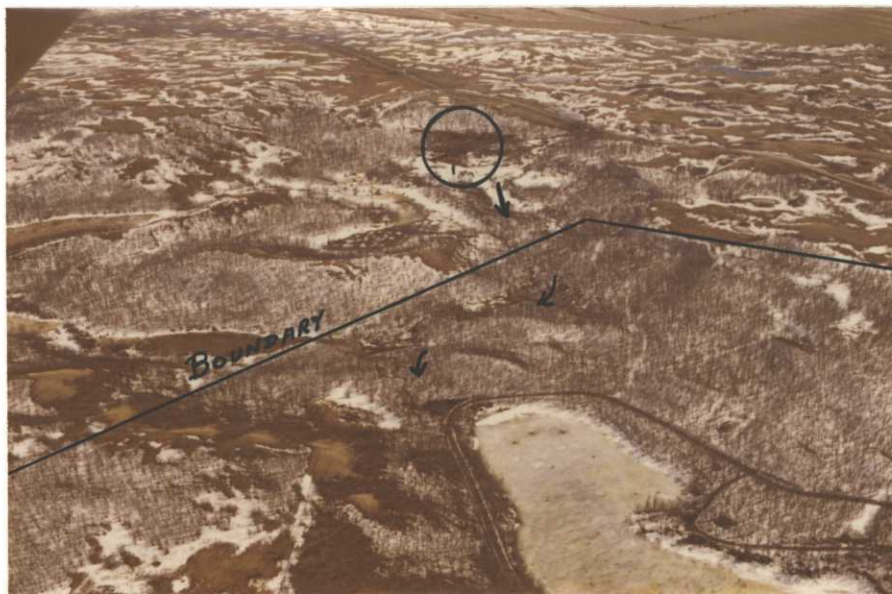
Periodic thaws with alternating cold weather and snow occurred during March. General thawing began March 27 but didn't make much progress until April 6 when there was a high temperature of 60°. The next day runoff water polluted by a cattle feedlot located ¼ mile east of the preserve was pouring into Sweetwater Lake. On April 12 the lake was brimful and water overflowed through the picnic ground until the next day. Sweetwater was ice free on April 18, seven days earlier than in 1970. Water continued to flow into the lake until mid August and then resumed after the 3" rainfall on September 4-5. Freeze up occurred with the -7° temperature of November 7, seven days earlier than last year.



Polluted runoff water from neighboring cattle feedlot just before it entered Sweetwater Lake. -Goeke



Cattle feedlot located $\frac{1}{4}$ mile east of the preserve's recreation area. - Goeke



This aerial view shows the offending feedlot, and the drainage route into Sweetwater Lake. - Goeke

The springs in the big-game enclosure continued to flow throughout the year, providing plenty of drinking water for the animals. Potholes in the enclosure contained water until mid-August and again for a while after the September 4-5 rains.

Devils Lake was ice free on April 26, three days earlier than last year. The Mauvais Coulee continued to run throughout the year and raised the level of Devils Lake from the spring elevation of 1418.3' msl to a summer high of 1421.05', only two feet from the proposed Garrison Diversion level and the lake's highest level since 1913. For the first time in the lives of most of the people of the Devils Lake region Devils Lake was a hotspot of fishing activity with many fishermen catching limits of northern pike averaging 4-5 pounds each. At the end of the year, after a heated local controversy, a weir was constructed between the main body of Devils Lake and East Bay to maintain the main lake at a minimum level of 1420'. Devils Lake froze over on November 7, fifteen days earlier than last year.

The higher level of Devils Lake has resulted in the restoration of much of the previously dry parts of Ft. Totten Bay. About 26 acres of preserve land south of Highway 57 have now been reflooded and received increased use by waterfowl and marsh birds. At the proposed Garrison Diversion level a total of about 40 acres of the preserve portion of the bay will be flooded.



All of the land above the highway in the foreground was dry in 1968. Preserve land is to the left of the line. Although the quality of the water in the main lake is improving, there is still a marked difference in the fresher water of the bay which is fed by water leaving the preserve.

- Goeke

2. Food and Cover.

Hay production was good though not up to the excellent crop of 1970. As in 1970 only one cutting was needed to insure adequate winter feed for the big game.

Range conditions in the big-game enclosure were generally good with the exception of portions of the steep south-facing slopes of Sullys Hill and the ridges west of Sullys Hill. These are preferred grazing areas and are subject to erosion. On May 3-4 the hillsides were aerielly fertilized at the rate of 66 pounds of nitrogen per acre. The lack of precipitation during May (.38") retarded growth and there were no visible effects of the fertilizing. With the relative lack of snow during November and December the slopes received additional grazing pressure and are in poor condition at the end of the year.

Acorn production was good for the second year in a row after ten years without a successful crop. The choke cherry crop was good but did not match the bumper yield of 1970. Juneberries were abundant for the first time since 1967 and stimulated local interest in berry picking.

The third outbreak of forest tent caterpillars in the Sullys Hill area since 1949 continued into its third year. The worst areas suffered only about 30% defoliation. Severe defoliation by variable oak leaf caterpillars occurred on 234 acres of the preserve during late August and early September. A more detailed report of the defoliation by both forest tent and variable oak leaf caterpillars is presented in Section V.

During the summer 13.6 acres of buckbrush were mowed with a rotary mower to reduce competition with grasses. The mower was also used to cut random browse paths through a 1.2 acre area of thick brush. This will increase utilization by deer and elk. Areas mowed in 1970 and 1971 are shown on the accompanying map.


Supplemental winter feeding of hay and grain cubes for the big game was conducted until April 29 and was resumed on November 30. Approximately 80 tons of hay and seven tons of cubes were fed to the animals during the 1970-71 winter. Cubes for the 1971-72 winter were made using barley and wheat as summarized in the following table.

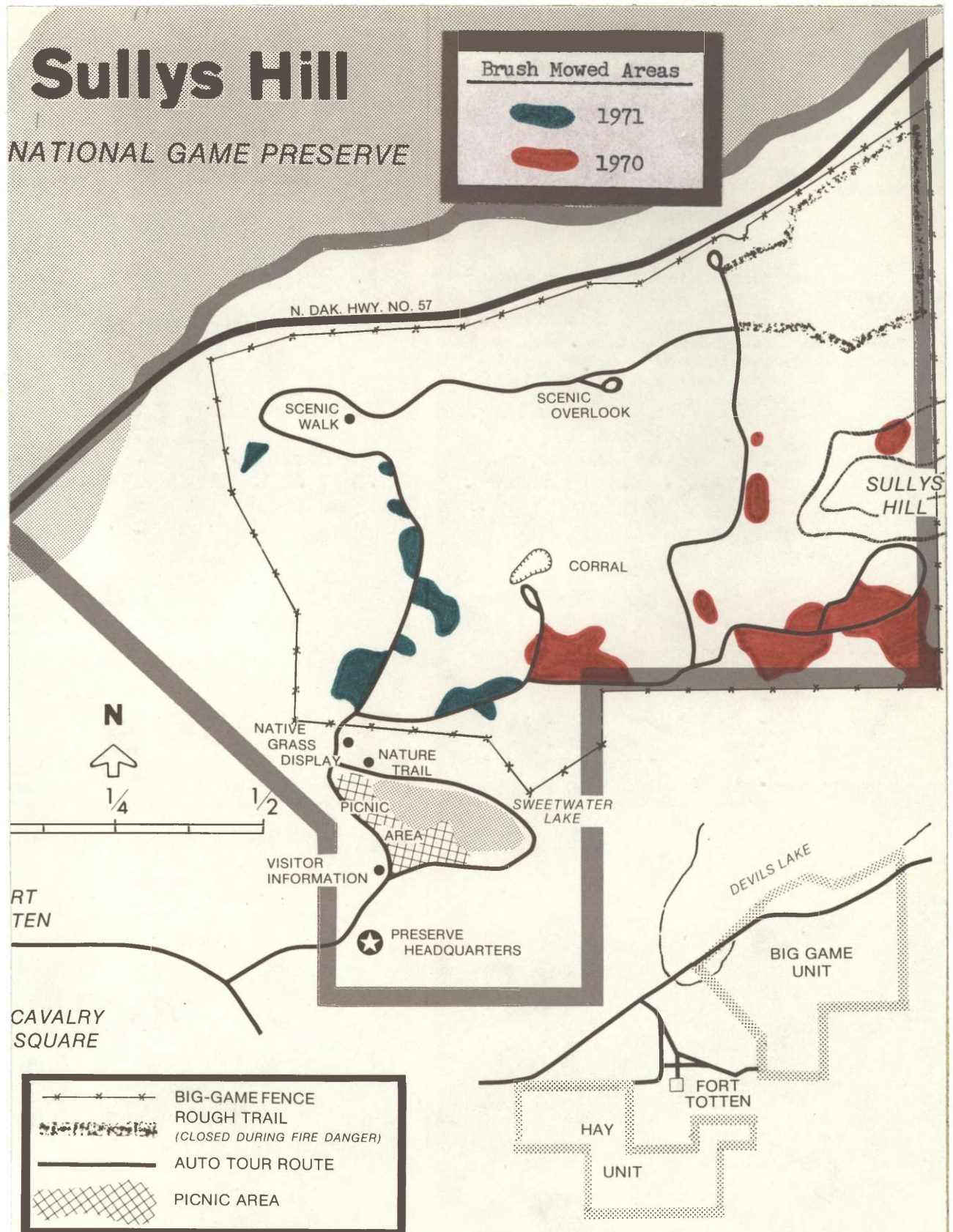
Wheat	6,630#		
Barley	5,235#		
Beef Protein 41	2,800#	\$5.00/100#	\$140.00
Molasses	700#	3.00/100#	21.00
Mineral (PV Mixer)	175#	7.00/100#	12.25
Vit. A & D Premix #25	140#	.25/#	35.00
Grinding & Cubing		7.60/T	59.57
Delivery		3.00/T	47.04
Delivery Weight	15,680#		\$314.86

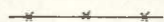



Sullys Hill

NATIONAL GAME PRESERVE

Brush Mowed Areas

-  1971
-  1970



-  BIG-GAME FENCE
-  ROUGH TRAIL
(CLOSED DURING FIRE DANGER)
-  AUTO TOUR ROUTE
-  PICNIC AREA

II. WILDLIFE

Summary of 1971 Wildlife-Related Outputs

Output	Units	RBU's
Cooperative Programs	2 Prog.	50,000
Banding	2 Prog.	50,000
Environmental Preservation		
Nat. Environments Preserved	1,674 Acres	33,480
Wildlife Maintenance		
Threatened Species	14 UD	140
Nationally Unique Species	15,182 UD	759,100
Special Recognition Species	27,151 UD	6,527
Wildlife Diversity	216 Spec.	43,200,000
Waterfowl Maintenance	31,498 UD	31,498
Wildlife Production		
Waterfowl Production	16 Prod.	11,300
Species Transplanted	5 An.	50,000
Specimen Donated	5 An.	5,000
Total Refuge Benefit Units		44,147,045

A. Migratory Birds.

1. Captive Display Flock.

At the end of 1971 the flock contained 20 giant Canada geese, 10 small Canadas, 15 snows, 9 blues and 2 whistling swans. All but the big Canadas are cripples collected from the surrounding area or acquired from other refuges. In addition to a number of cripples picked up locally during the fall 6 giant Canadas, 2 small Canadas, 8 blue and 5 snow geese were transferred from Sand Lake NWR.

Following the fall roundup on November 8, 10 giant Canadas, 1 small Canada, 1 snow and 1 blue goose flew off for parts unknown.

The flock was released onto Sweetwater Lake on April 8. A blue goose that left the previous fall returned on April 28 but left again following the molt accompanied by a snow goose that had recovered. During the summer a whistling swan had its neck broken by local children and had to be destroyed. Another swan that had been shot the previous fall recovered from its injuries and flew away in early September. It returned on November 1 and walked into

the flock's winter pen during the fall roundup on November 8. After 2½ weeks with the flock it flew back to Sweetwater Lake and then three days later disappeared, probably scared away by an immature bald eagle that was staying near the lake.

Canada geese successfully hatched four nests on Sweetwater Lake. Several other nests were unsuccessful including one by K5 (a 2-yr. old gander) and A4 (an adult goose) which was incubated between 59 and 64 days. Pair L2,J3 again nested on shore and again hatched their nest after it was moved to a raft off shore. After tolerating picnickers and spectators only 30' from the nest and withstanding occasional stonings by "playful" children, the pair lost their one gosling to natural causes three days after it hatched.

Total production from the four nests was 11 goslings of which only 1 survived. One was known to die of natural causes but most of the others were probably caught or killed by visitors. A 15-pound common snapping turtle, the only one ever recorded on the preserve, was caught near the lake on June 15 and may have caused some loss, though its doubtful.

1971 Successful Nests

Pair M+I	Hatch	Goslings	Raised to Flight
B1,G7*	5/19	2	0
H6,L5*	5/25	5	1
G2,I2	5/27	3	0
L2,J3*	6/1	1	0
		11	1

* Denotes the 3 successful pairs in 1970.

During the last week of June a lone big Canada flew in and joined the display flock. Following the molt two more large Canadas arrived. As there were then no adult Canadas in the flock that were not banded with either standard or black bands or both, the three new birds were probably returning Sullys Hill geese that had migrated in 1970. Of the eight Canadas that left in 1970 bands have been recovered from two. One was shot near Springfield, South Dakota, on 11/30/70, three days after it left Sullys Hill. The other was shot on 10/11/71 near Hartney, Manitoba, Canada.

In November a wounded big Canada was picked up near Devils Lake and brought to the preserve. The goose was quite tame and had been banded as a gosling at the Delta Waterfowl Research Station in July. It was treated at the Northern Prairie Wildlife Research Station at Jamestown and returned to Sullys Hill to join the display flock.

2. Geese - Wild.

The first spring migrants were observed on the morning of March 30, eight days earlier than in 1970. Numerous flocks of Canada geese and blue and snow geese were observed milling around over the yet frozen lakes and sloughs. The same afternoon an abrupt change in the weather chased the birds back south. They returned in force a week later with many flocks passing overhead during the period of April 7-9.

During the fall several thousand small Canadas roosted along the west side of Devils Lake and made daily feeding flights south over the preserve in early October. No significant number of blue or snow geese used Devils Lake. The only major exodus of geese observed occurred during the morning of October 29 when about 5,000, mostly blues and snows, passed overhead. That night an early snowstorm with near blizzard conditions dumped almost 7" of snow on the area. A flock of 80 small Canadas sat out the storm with the display flock on Sweetwater Lake before continuing south. No other wild geese were known to use the preserve.

3. Ducks.

As with the geese many migrants, mostly mallards with some pintails, first arrived on March 30 but were pushed back and didn't return until April 7. The spring migration peaked during the last week of April as it did in 1970.

Duck production was again low with only 15 ducklings from 4 broods reaching flight age. All four broods, 3 blue-winged teal and 1 mallard, were on Ft. Totten Bay. No broods were observed on Sweetwater Lake. An orphaned redhead duckling donated to the preserve was raised and later transferred to the Northern Prairie Wildlife Research Station at Jamestown.

With the rising level of Devils Lake about 26 acres of preserve land in Ft. Totten Bay have been flooded, (ownership of this land is discussed in Section VII). The increased amount of waterfowl habitat has increased duck use on the preserve (Devils Lake use is no longer included) which totaled 31,418 use days. The year's peak population occurred during the third week of August when 475 ducks, of which 300 were blue-winged teal, were present. Use during the fall continued relatively high with a later influx of mallards and scaup. As usual the goose feeder on Sweetwater Lake attracted many ducks that stayed for a handout until freeze up forced all but 15 mallards on with their journey. These, too, left within a week. Unusual duck observations during the fall included a black duck on September 5, a hooded merganser on October 31 and a common golden-eye on November 3.



Beware of vicious dog!

- Goeke

The recent trend of increasing use by wood ducks continued with a peak number of 56 wood ducks and a total of 2009 use days. This compares with peaks of 5 in 1966, 9 in 1968 and 33 in 1970. This represents a 64% increase in use over 1970. Results of the wood duck banding are discussed in Section V.

4. Whistling Swans.

The first swans were observed on April 7, four days earlier than in 1970. The first fall migrants were observed September 24. Several hundred were observed flying south over the preserve just before dark on October 31. A family group of 4 flying over on November 2 was the last seen.

5. Coots.

Coot use responded to the increased habitat on Ft. Totten Bay. Coots arrived on April 22 and peaked at 14 in early May. This year, however, they nested and raised 12 young from 4 nests. Numbers began increasing during the third week of August and reached a peak of 1,100 during the first week of September. The last coots were seen on November 3. The total of 16,030 use days reflects the changing habitat as compared to the 600 use days in 1968 when the preserve portion of Ft. Totten Bay was almost dry.

6. Other Waterbirds and Shorebirds.

Two new species from these orders, a green heron and a cattle egret, were added to the preserve bird list during 1971. A green heron was first observed on May 28 and was probably the same one observed several times during the summer until it was last seen on August 31. A cattle egret was observed May 31 on Ft. Totten Bay in the company of two black-crowned night herons. Another unusual observation was that of a woodcock near the start of the auto tour route on the evening of July 14. A woodcock was observed in 1970 also.

Heron use increased as a result of the increased amount of habitat on Ft. Totten Bay. Great blue herons peaked at a preserve high of 18 on August 20 and used the big trees in the picnic area as a roost. Common egrets were occasionally noted with two observed along the shore of Devils Lake on June 7 and another over the preserve on June 26. From August 15 to 28 they were regularly seen on Ft. Totten Bay and Sweetwater Lake with a high of 3 observed on August 20.

Use by western and pied-billed grebes was about normal but few horned or eared grebes were observed. Cormorant use in the area is increasing as Devils Lake revives and some nesting occurred on the small island on the north side of Ft. Totten Bay.

Use of the area by white pelicans is also increasing. They were first observed on April 30 and 4-500 were present on Devils Lake until the end of June. No nesting was observed and the last stragglers were seen on October 15. Three pelicans with broken wings amputated at the break were brought to the preserve by USGMA Sechrist on April 30. Two died but the surviving bird was a popular member of the display flock throughout the visitor season. Another pelican apparently lost part of a wing and survived unaided on Devils Lake. It was captured in good condition and brought to the preserve on November 5. Both pelicans plus a crippled Swainson's hawk were donated to the Dakota Zoo in Bismarck.

No sandhill cranes used the area and few were observed during migration. One flock of 11 was seen on April 15. A lone pair was observed circling over the preserve on June 21. In December Manager Goeke and GMA Sechrist picked up an immature crane from the Howard Slater farm about 5 miles southwest of Esmond. The Slater children had found it unable to fly and cared for it thinking it would be able to fly away later. When it was turned over to the preserve, it was eating well and appeared to be in good health. There were no apparent wounds but the bird could still not fly. It was taken to the Northern Prairie Wildlife Research Center at Jamestown to be transferred to Sherburne NWR.

The variety of shorebirds was smaller than in 1970, probably as a result of less exposed shoreline. The rising level of Devils Lake has pushed the shoreline up into the brush and tall vegetation. Long-legged shorebirds such as the lesser yellowlegs were more abundant but short-legged sandpipers such as the peeps were almost totally absent.

The number of gulls and terns using the preserve was about normal. During the spring 2-300 ring-billed and Franklin's gulls fed in the hayfields of Unit II.

7. Mourning Doves.

Doves are not abundant at Sullys Hill. The first migrants in the area were observed on April 8 and on the preserve April 12, one day later than last year. Most doves are gone by the end of September but a straggler was observed on the preserve November 23.

B. Upland Game Birds.

1. Sharp-tailed Grouse.

Nesting was again successful in Unit II. During the haying in July three broods with a total of 24 young were observed. The wintering population is about the same as last year with several small flocks in the big-game enclosure and others in the shelter-belts of Unit II.

2. Ring-necked Pheasant.

Given up on last year, a few may still be hanging on. A cock and a hen were observed in Unit II on July 16 and a hen was observed near the main entrance during the fall.

3. Gray Partridge.

Although the local population is low, partridge had a relatively good year on the preserve. During haying, three broods with a total of 18 young were observed. All birds observed were in Unit II.

C. Predaceous Birds.

1. Hawks and Falcons.

The first migrant to arrive was a sharp-shinned hawk on March 15. A few marsh hawks passed through on March 30-31. Red-tailed hawks first appeared on March 31 and then staged a spectacular migration

on April 4. Between 1 pm and 3:30 pm. 146 red-tails were counted as they soared over preserve headquarters toward the northwest. As many as 22 could be seen overhead at one time even with lateral visibility restricted by the surrounding trees. The migration continued in decreasing numbers until April 6. Altogether seven species of hawks and one falcon (sparrow hawk) were observed during the spring.

In July a red-tailed hawk nest containing two nearly fledged young was discovered in an aspen tree near the dump. This was the only known hawk nest on the preserve.



Manager's son Jimmy feeding mice to crippled Swainson's hawk. - Goeke

On September 13 an immature male Swainson's hawk with a broken wing was captured on the road near headquarters. The break was partially healed but was too near the end of the humerus to be repaired. The hawk tamed quickly on a handfed diet of mice from the grain bin (as many as 11 in one day) and in November was donated with two pelicans to the Dakota Zoo in Bismarck.

On December 2 a sick rough-legged hawk was captured on the Louis Bryl farm near Webster and turned over to the preserve. The bird was in very poor condition and died on December 5. The frozen carcass was turned over to Gary Pearson at the NFWRC who diagnosed the bird's disease as avian pox, a disease rarely found in birds of prey.



Rough-legged hawk that died of avian pox.
Notice lesions on feet and around bill.

- NFWRC



Lesions on the feet, around the bill and on internal
organs are typical of avian pox.

- NFWRC

2. Ospreys.

Osprey observations were fewer than in 1970. On April 25 one was observed carrying a 6" fish near Sweetwater Lake and on April 30 and May 1 two were repeatedly observed in the same area.

3. Eagles.

Although only one adult bald eagle was observed during the spring (April 4), the fall migration ~~more~~ than made up the difference in total use. An unidentified eagle was observed on October 18 and an immature golden eagle on October 22. Then from November 3-27 bald eagles were observed on 12 of the 25 days. As many as four eagles were observed at a time roosted in preserve trees during the period. The peak of four eagles on November 9 included three adult and one immature. At no time was more than one immature observed at a time although at least two young bald eagles with varying amounts of white used the preserve.

4. Turkey Vultures.

None were observed.

5. Owls.

Great horned owls are heard and seen occasionally but their numbers are low. As usual, screech owls were heard only during late August and early September. A gray phase observed on February 3 and March 31 may have spent the 70-71 winter in the area.

6. Ravens and Crows.

The common raven was added to the station bird list on April 3 and 5. The first migrant crows were observed on March 11, a week earlier than in 1970. Numbers were about normal with several hundred gathering in the area in early October. Again this year two are wintering on the preserve.

7. Magpies.

Black-billed magpies are year-round residents and are most common during the fall when they are quick to clean up offal from the surplus animal disposal. If anything, numbers were somewhat higher with as many as 20 scavenging at one time.

D. Other Birds.

Altogether 167 species of birds were observed during the year, 14 less than in 1970, and 11 new species were added to the preserve bird list. The list now totals 216 species of which 199 have been observed since 1969. The new species not already mentioned include rough-winged swallow, yellow-throated vireo, Nashville, Blackburnian, mourning and Canada warblers, swamp sparrow and snow bunting.

The 1970-71 winter was an unusual season for passerine birds. A female cardinal was a daily attendant at a feeder from December, 1970, until she was last seen March 26. A flock of about 20 robins wintered in good condition, surviving on the abundance of frozen berries. There were scattered observations of purple finches during December and January, but after February 18 seven used the feeders daily. Evening grosbeaks, pine grosbeaks and common redpolls were totally absent, whereas they were common during the previous winter and are again at the end of 1971.

During the spring first observation dates are recorded for all species. A few representative species are listed below in chronological order.

March 13	Slate-colored Junco	May 5	White-throated Sparrow
" 30	Western Meadowlark	" 7	Brown Thrasher
April 7	Red-winged Blackbird	" 16	Veery
April 10	Yellow-shafted Flicker	" 17	Red-breasted Grosbeak
" 19	Belted Kingfisher	" 17	American Goldfinch
" 26	Hermit Thrush	" 18	House Wren
" 27	Myrtle Warbler	" 20	Western Kingbird
" 28	Vesper Sparrow	" 20	Baltimore Oriole
" 29	Tree Swallow	" 21	American Redstart
May 5	Clay-colored Sparrow	" 23	Least Flycatcher

The first large scale migration took place during the night of March 30 and by the morning of the 31st large numbers of juncos and tree sparrows were present. Myrtle warblers first arrived on April 27 but the main warbler migration occurred on May 21-23 as compared to May 8-10 in 1970. On the morning of May 23 with temperatures in the upper 40's, a low overcast and strong north winds the migration peaked with a spectacular total of 15 species of warblers observed near Sweetwater Lake.

An early fall migration of warblers and vireos occurred from August 30 to September 1. A total of four species of vireos and eight species of warblers was observed with the peak occurring on August 31. Orange-crowned warblers were common September 13-19 and myrtle warblers were abundant as they passed through on September 23.

In conjunction with the Audubon Society's renewed reporting of the Northern Great Plains Region, revived in the fall of 1970, seasonal bird population and migration information is submitted for inclusion in American Birds.

The annual Christmas bird count was conducted on December 30. Three participants in one party observed a count record of 1,409 birds of 19 species.

Sharp-tailed Grouse	39	Northern Shrike	2
Gray Partridge	12	Starling	2
Great Horned Owl	3	House Sparrow	158
Hairy Woodpecker	6	Rusty Blackbird	8
Downy Woodpecker	12	Evening Grosbeak	126
Blue Jay	33	Pine Grosbeak	21
Black-billed Magpie	22	Common Redpoll	878
Common Crow	2	Tree Sparrow	1
Black-capped Chickadee	38	Snow Bunting	32
White-breasted Nuthatch	14		

Bohemian waxwings were observed during the count period but not on the day of the count.

E. Big-Game Animals.

1. Buffalo.

At the beginning of 1971 the buffalo herd totaled 34 animals - 17 bulls and 17 cows. There were no winter losses and the herd entered the spring in fine condition. The 15 mature cows produced 9 calves for a herd productivity of 60%. The calves, which arrived later than usual, were born on the following dates:

(1) April 28	(3) June 10
(1) May 10	(2) June 13
(1) June 4	(1) June 20

The calf born May 10 and one born June 10 are believed to have died on May 27 and June 24 respectively. Both were observed in poor condition, apparently resulting from the young cows' inability to provide sufficient milk, but could not be captured for treatment.

The herd went through the summer in good condition. The 3-year-old bull introduced in 1970 from Ft. Niobrara NWR is maturing into a fine adult. However, the 2-year-old bull also brought from the Fort in 1970 is no larger than our own yearlings and probably will go in the 1972 disposal. During the summer the three oldest of the five mature bulls, ages 13, 7, 5, 3 and 3 years respectively, vied for control of the herd. The 7-year-old again reigned supreme and for the second year in a row is believed to have done all the breeding. Throughout the breeding season both the 13-year-old and the 5-year-

old bulls were kept out of the herd. With the onset of cold weather came a cooling of the blood and the whole herd is again together for the winter.

During the fall one $3\frac{1}{2}$ -year-old bull, five $2\frac{1}{2}$ -year-old bulls and three mature cows were removed. Carcass price in 1971 was \$280. Weights after skinning ranged from 620 down to 430 pounds with an average of 524 pounds. Blood samples from all nine animals tested negative for brucellosis and leptospirosis. With certification of North Dakota as brucellosis free vaccination of buffalo calves was discontinued in 1971. The badly deteriorated corral will be removed in 1972 and any future handling of animals will be done with the aid of a tranquilizer gun.

1971 Buffalo Herd Composition

	Bulls				Cows			
	Mature	2	1	Calves	Mature	2	1	Calves
Spring 1971	5	6	6		15	1	1	
Births				4				5
Deaths				-1				-1
Removed	+1	-5			-3			
December 1971	4	1	6	3	12	1	1	4
Spring 1972	5	6	3		13	1	4	



The pause that refreshes.

- Goeke

2. Elk.

At the beginning of 1971 the elk herd totaled 23 animals - 3 bulls, 12 cows and 8 calves. There were no winter losses after the first of the year and the herd entered the spring in excellent condition.

Calving takes place during late May and June but the calves usually aren't seen until they are a month or more old. Five calves were first observed on July 1 but the complete count of seven wasn't obtained until September 5. There were no known sets of twins as occurred in 1969 and 1970. Based on the spring total of 12 mature cows and production of 7 calves, herd productivity was 58% compared to 46% in 1970

There were three mature bulls, ages 11, 8 and 3 years respectively, in the herd during 1971 and the 11-year-old retained his position as herd bull. Both of the old bulls lost their antlers on April 8 and the youngest on April 26. By April 28 the two older bulls were budding their new racks. The herd bull formed his new harem on September 1.

Sometime in early October one of the spike bulls disappeared and it wasn't until November 9 that the carcass was found in the woods about 100 yards from the corral. By then the remains were too badly chewed and decomposed to tell what killed him. On October 12 some visiting Indians reported to the Indian police at Ft. Totten that someone was shooting at the "deer" near the corral. The manager was away at the time but Biological Technician Nelson and one of the Indian police investigated and checked several cars without success. During the time from the alleged shooting until reporting and investigation, the shooters could easily have left the preserve. The elk had a tendency during the evenings to hang around the salt block near the corral. This plus the proximity of the carcass to the corral gives credence to the possibility that there actually was a shooting and that the targets mistaken for deer were actually elk. The bull, if he were wounded, might easily have walked off a hundred yards or so before lying down and dying. The other possibility is that he was gored by the herd bull during the rut. This is unlikely since a spike bull is not apt to do battle with the powerful herd bull.

On December 8 it was noticed that we were short another elk, this one a yearling cow. The missing cow was noticeable earlier in the year because of her gaunt appearance and later in the year because of her independence from the harem. Most likely she died of natural causes.

In the 1969 narrative report the possibility of inbreeding within the elk herd was discussed at length. In 1970 a yearling bull was transferred from Ft. Niobrara NWR only to disappear before the end of the year. No trace of the bull was ever found. On October 15, 1971 another spike bull transferred from Ft. Niobrara was released. This one quickly joined the herd and thankfully is doing fine.



This spike bull elk may have been shot by visitors.
The carcass was too badly deteriorated to determine
the cause of death.
- Goeke

During the fall 8 elk were removed, 4 spike bulls and 4 mature cows. Carcass price in 1971 was \$110. Weights after skinning ranged from 304 down to 140 pounds with an average of 241 pounds. Two of the spike bulls were unusually small and were probably one of the sets of twins from 1970. Both had deformed antlers still in the velvet in November and weighed 156 and 140 pounds respectively. Blood samples from all eight animals tested negative for brucellosis and leptosperosis. At the end of the year the herd totaled 21 elk - 4 bulls, 10 cows and 7 calves.

1971 Elk Herd Composition

	<u>Bulls</u>			<u>Cows</u>		<u>Calves</u>
	Mature	2	1	Mature	1	
Spring 1971	3		5	12	3	
Births						7
Introductions			1*			
Deaths			-1		-1	
Removed			-4	-4		
December 1971	3		1	8	2	7
Spring 1972	3	1		10		7

* Transferred from Ft. Niobrara NWR.



Those cubs take a lot of chewin!

- Goeke



2 $\frac{1}{2}$ -year-old doe killed by dogs on November 8. - Goeke

3. White-tailed Deer.

An aerial census on January 12, 1971, indicated the captive herd totaled about 30 deer in the main enclosure and 6 in the recreation area. There was apparently some winter mortality. On February 4 a 1½-year-old doe was found dead of unknown causes. Her legbone marrow was red indicating she was in poor condition. On February 22 a total of 25 deer were observed at the corral and on March 29 there were 24. On July 1 the first fawn was observed and an estimated 10 fawns were born.

During the summer one of the summer students left the gate to the dump open on three different nights, and the deer in the recreation area all escaped. The snowstorm of October 30 filled in the cattle-guard between the recreation area and the main enclosure. This allowed seven deer to walk down into the recreation area before the gate was closed. An aerial census on November 3 showed there were 24 - 27 deer in the main enclosure and 7 in the recreation area.

With seven deer escaping to the recreation area the surplus number to be removed was reduced from 12 to 5. This was further reduced to 4 when a 2½-year-old doe was killed by dogs on November 8. During the aerial census a special effort was made to determine the sex ratio of the adult deer. Only three large bucks were observed so the disposal was limited to two adult does and two fawns. The end-of-the-year deer population on the entire preserve based on the November 3 census flight was as follows:

Captive:	Unit I - Main Enclosure	19-22
	Unit I - Recreation Area	7
Wild:	Unit I - Hay Meadow & Shore	0
	Unit II-	4
		<hr/> 30-33

One deer outside the enclosure was hit by a Public Health Service car June 9 along the preserve portion of Highway 57. There was only minor damage to the car but the deer had to be shot. The State donated the carcass to the Sioux Tribe.

F. Fur Animals, Predators, Rodents and Other Mammals.

1. Muskrats.

With the increased amount of suitable marsh on Ft. Totten Bay the muskrat population is expanding. The number using Sweetwater Lake remains high and the animals are popular with visitors using the recreation area.

2. Mink and Weasels.

The only mink observed was a pair on the ice of Ft. Totten Bay April 9. They also are known to frequent Sweetwater Lake. No weasels were observed but tracks are occasionally found in the snow. The population is probably down from 1970 when there were several sightings and tracks were more common.

3. Beaver.

No beaver were observed but on July 30 fresh cuttings were found in a stand of newly flooded aspen along the preserve shore of Devils Lake. There was no sign of beaver on Sweetwater Lake.

4. Raccoons.

The raccoon population has not recovered from the distemper outbreak of 1970. Tracks are common around Sweetwater Lake but sightings are unusual.



Antics of these fox pups near the auto tour route delighted many visitors.

- Goeke

5. Foxes.

The preserve population remains high. Foxes are popular with visitors who often see them along the tour route. One den with four pups was located in the side of an Indian burial mound in clear view of visitors taking the tour. The pups were very cooperative and during the evenings often played on top of the mound, much to the delight of visitors who stopped to watch. On March 24 a cross fox was observed near headquarters. The fox was very dark with a large ^{black} patch extending from the back of the neck onto the tail. No gray foxes were observed.

6. Bobcat.

On March 23 fresh bobcat tracks were found in the snow near the east end of Sweetwater Lake. Scats were also found further identifying the cat. This was the first recorded instance of a bobcat visiting the preserve.

7. Dogs and Cats.

Free-ranging dogs were again a problem in 1971. They were heard chasing the animals on several occasions and on November 8 they killed a 2½-year-old whitetail doe. One of the four dogs found in the enclosure at the time was shot and in the next two days two more were removed. A total of seven dogs and two cats were removed during the year.

8. Skunks and Badgers.

The striped skunk population appears to have declined from its high level of 1970. There were fewer sightings on the preserve and fewer road kills along Highway 57.

One badger was observed in January on Unit II. Following control of the pocket gophers in Unit II, there was little left to attract badgers to the area.

9. Rabbits and Hares.

Cottontail numbers are down from 1970. Snowshoes are at least as abundant, as cottontails. Snowshoe observations were more frequent and one young hare was a regular evening visitor at the goose feeder during much of the late summer and fall. Their tracks and droppings were common in the snow of wooded areas at the end of the year. No jackrabbits were observed.

10. Squirrels.

Both gray and fox squirrels are abundant. This is probably related to the abundant food supply resulting from the good acorn crops of 1970 and 1971. Previously the last good acorn crop was in 1959. The number of fox squirrels seems to have increased over 1970. The 3:1 gray to fox ratio of 1970 appeared to be more like 2.5:1 or even 2:1 in 1971. Mating chases were first observed on February 15 and on April 9 a gray squirrel nest with 1-week-old young was found inside the roof of the goose house. A black squirrel was observed in the headquarters area on numerous occasions throughout the year. At the same time a black female that appeared to be nursing young was observed on at least two occasions in the main enclosure near the water tank, over a mile from headquarters. Both squirrels are believed to be melanistic gray squirrels.

11. Woodchucks.

The population remains low with few sightings outside the headquarters area. A woodchuck took up residence near the goose house and was often seen in the headquarters area. Another was seen occasionally on the north side of Sweetwater Lake.

12. Pocket Gophers.

During the spring pocket gopher control was conducted on 175 acres of badly damaged hayland in Unit II. Strychnine barley was applied at the rate of two pounds per acre through a borrow builder. Following additional spot treatment in the fall, almost complete control was achieved. No loss of birds or other wildlife was noted.

G. Fish.

Numbers of fathead minnows and sticklebacks in Sweetwater Lake were again high and attracted a variety of fish-eating birds. The fish were also popular with many children who enjoyed feeding bits of bread to swarms of hungry minnows.

H. Reptiles and Amphibians.

Flains garter snakes and red-bellied snakes were both common, although the garter snakes were less abundant than in 1970. No smooth green snakes were observed. Painted turtles, leopard frogs, wood frogs, and boreal chorus frogs were common. On June 15 a 15-pound common snapping turtle was picked up near Sweetwater Lake. This is the first known occurrence of this species on the preserve and how it got here is unknown. They are known to occur south of here along the Shesenne River but this one was too large to have wandered in through the fence. Most likely someone released their pet into the lake when it was small.

I. Endangered Species.

1. Rare and Endangered. None.
2. Peripheral. None.
3. Status Undetermined.

The osprey was the only species from this group observed. One was observed near Sweetwater Lake on April 25 and two were observed together near the lake on April 30 and May 1.

J. Disease.

No cases of wildlife disease were observed. The raccoon population has not recovered from the distemper outbreak of 1970.

All butchered animals were blood tested for brucellosis and leptosperosis by the University of North Dakota.

III. DEVELOPMENT AND MAINTENANCE

A. Physical Development.

Following the Federal Water Pollution Control Administration's 1967 inspection of the preserve's sanitary facilities, several improvements were deemed necessary. Planning funds were available in 1970 and construction money was budgeted for 1971. Beginning in late 1970 Public Health Service water tests showed the drinking water at the preserve office was contaminated. As part of the planned construction it was decided to replace the Orangeburg plastic pipe sections of the headquarters water system. Two contracts were issued, one for work on the waste treatment facilities and water system and one for a well for the new comfort station.

Contract # 14-16-0003-13,413

Contractor: Hollbeck Water-Well Service, Devils Lake.

Construction Cost: \$701.

A 4" well was drilled approximately 85' southwest of the new comfort station. At a depth of 83' the well produced about 20 gallons/minute but the sodium content was too high for drinking purposes. A 4" test hole was drilled 250' southwest but hit the same high sodium water. It was decided to develop the first well for the comfort station and connect the new drinking fountains to the existing mains from the headquarters well. After 40 years the water mains to the recreation area still appear to be in good condition.

Contract # 14-16-0003-13,335

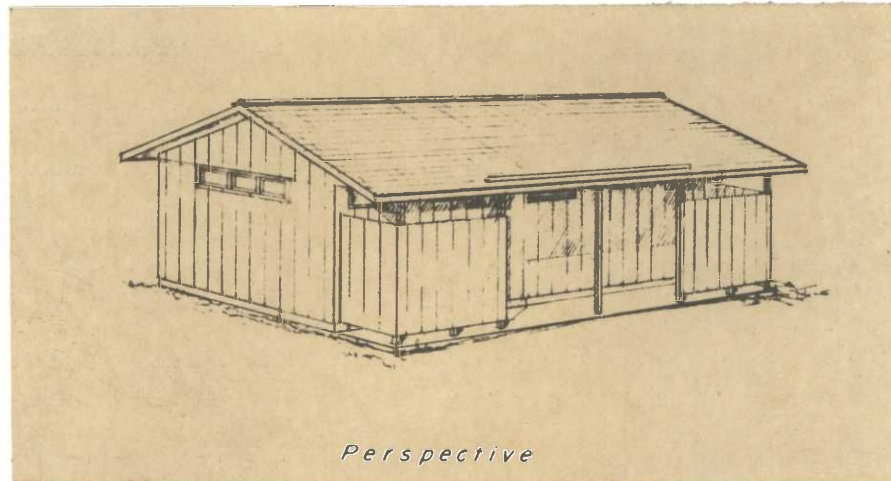
Contractor: Heit Construction Company, Devils Lake.

Construction Cost: \$27,604

Engineering Cost: \$10,357

Work accomplished included:

- (1) Construction of a 28'x19'4" wood frame comfort station with septic tank and drainfield.
- (2) Installation of 600' of underground power cable from headquarters to the comfort station.
- (3) Installation of a new septic tank for the office and a drainfield to serve the office and quarters # 1. The abandoned office septic tank was pumped out and refilled with sand.
- (4) Installation of a new sewer line and subsurface sand filter for quarters # 2.
- (5) Installed a Gould submersible pump with pitless adaptor on the comfort station well, laid 65' of water line to the comfort station and installed a 220 gallon storage tank in the building.



Blueprint drawing of new comfort station. Slight differences exist in finished building. Panel extends from center entrance post back to wall.

- (6) Replaced the old pump at the headquarters well with a Gould jet pump.
- (7) Replaced the Orangeburg plastic water line from quarters # 1 to the goose house, office and quarters # 2 with 793' of polyvinyl chloride pipe, and installed a water hydrant at the goose house.
- (8) Installed 3 new drinking fountains with a total of 451' of water line connected to the old mains.
- (9) Sterilized the entire water system after construction was complete.

The headquarters drainfield area was landscaped and reseeded during the summer. The extensive digging during the fall for the water lines, however, will require considerable landscaping and reseeded this spring.

In addition to road grading, snow removal, vehicle maintenance, trash and litter removal and a multitude of minor jobs the following noteworthy developments were accomplished:

1. Headquarters Area.

- a. Office-Shop Building: An 18'x11' concrete slab was poured in front of the shop entrance.
- b. Quarters # 1: A new front door was installed, a small dark-room was constructed under the basement steps and the septic tank was pumped out.

- c. Quarters # 2: All windows were replaced. One living room window was removed and the opening walled up. The house was resided with 12" wide masonite siding and painted. New doors and combination storm doors were installed and concrete porches constructed at both entrances. Additional cupboards were built in the kitchen. A hallway door was installed and all inside door latches were replaced with standard doorknobs. The old electrical entrance cable and empty meter box were removed and a new entrance installed. The living room and kitchen were painted. The garage also received a second coat of paint and the septic take was pumped.
- d. Goose House: A new electrical entrance was installed and the lead-in wires were raised four feet.
- e. Pump House: A new 220 v. fusebox was installed.
- f. The visitor contact station was moved to a new location near the office.
- g. One half mile of abandoned telephone line and poles was removed.
- h. The wrought iron fence (160') at the preserve entrance was repaired and painted.



Quarters # 2 built in 1939 prior to this year's work.
- Goeke



Brash, Nelson and NYC's installing new window unit.

- Goeke



1971 work included new siding, windows, porches, doors and a paint job. A new sidewalk and a few interior jobs remain for 1972.

- Goeke

- i. Approximately 100 cubic yards of fill were hauled to construct a 4-unit parking area for heavy equipment adjacent to the goose house.
 - j. The diesel fuel storage tank and stand were repainted.
 - k. A large elm tree was removed from the office lawn to make room for the new Headquarters drainfield.
 - l. Two speed control bumps were constructed on the entrance road.
2. Recreation Area.
- a. Improvements in the picnic area begun in 1970 was almost completed. Work accomplished in 1971 included:
 - (1) Construction of 4 new parking areas.
 - (2) Gravelled all parking areas (total capacity about 80 cars).
 - (3) Erection of about 200 bumper posts along road and around parking areas.
 - (4) Widened, straightened and gravelled .25 mile of road.
 - (5) Removed additional trees and stumps.
 - (6) Playground equipment overhauled and painted and giant stride removed.
 - (7) Constructed 5 new picnic tables and painted 12 older ones.
 - (8) Removed remaining pit toilet and razed one flush toilet.
 - (9) Seeded grass in cleared portions of picnic area.



Pit toilet being removed pending transfer to BIA in 1972. The new comfort station can be seen in the background.

- Goeke

- b. The 88' long waterfowl observation deck begun in the fall of 1970 was completed and the area landscaped.
- c. The 1-mile nature trail was completed and opened.
- d. A new recreation area entrance sign with one panel for the visitor season and another for the winter was received from the regional sign shop and installed at the entrance gate.

3. Big-Game Enclosure.

- a. Trees were trimmed along 5 miles of road to provide 12' overhead clearance for pickup campers and tour buses. Roadsides were mowed to control brush.
- b. Six miles of fenceline trail and 7 miles of fire trails were mowed with the rotary mower.
- c. Encroaching brush and trees were hand cut from several sections of big-game fence.
- d. An abandoned dump was buried and an old storage area for used wire and culverts etc. was removed.
- e. Old wooden posts were replaced with steel posts along a .25 mile section of big-game fence.
- f. A new catch basin was installed for the water tank and the tank received a new lining of concrete.
- g. One additional salt box was constructed for the big game.

4. Miscellaneous

- a. A new recognition sign was erected along Highway 57 on the east shore of Ft. Totten Bay. Two directional signs were erected in Ft. Totten and a new entrance sign was erected at the preserve entrance. All signs were from the regional sign shop.
- b. An old $\frac{1}{4}$ -mile trail from the dump to the gravel pit was improved. This shortened the hauling distance to the recreation area from $2\frac{1}{2}$ miles to $\frac{1}{2}$ mile and eliminated the need to haul through Ft. Totten.
- c. Steel gates were repaired once in Unit I and 4 times in Unit II following repeated vandalism.
- d. Seven miles of fence in Unit II were repaired and a new gate built at the east end of the main hayfield.

- e. A gate^{was} built near Highway 57 to close the old and now flooded road across Ft. Totten Bay.
- f. The old dump was covered and a new pit dug.
- g. Rocks were hand picked from 300 acres of hayland in Unit II.

5. Equipment.

- a. Ferguson Tractor: One rear axle was replaced and a new clutch and throwout bearing installed. The tractor was rigged for fence clean up on WPA's. A wire winder was built using the rear end from a 1957 Ford car. The front-end loader, after lying in pieces in the boneyard for 10 years, was rebuilt and remounted for pulling posts.
- b. Jeeps: The engine in jeep I-88659 was overhauled by the Ford garage in Devils Lake and jeep I-89990 was tuned up. Jeep I-88659 was also painted at the preserve.
- c. TD-6: The new "heavy duty" radiator installed by IHC in 1970 sprang several leaks and required several time-consuming repairs.

6. Major Equipment Acquired During 1971.

- a. John Deere 112 lawn tractor with 47" mower.
- b. Montgomery Ward 7' rear-mounted tractor blade.

B. Plantings.

- 1. Aquatic and Marsh Plants. None.
- 2. Trees and Shrubs.

About 10 small aspen trees and 10 red-osier dogwood shrubs were transplanted to the landscaped area at the waterfowl observation deck. Many were pulled out or broken by vandals and less than half survived. Two 8' basswood trees were planted at quarters # 1.

3. Grasslands.

Twenty acres of the 40-acre planned burn area in Unit II were seeded to native grasses by Devils Lake WMD personnel.

4. Cultivated Crops.

No crops were planted. Thirty acres of the east hayfield in Unit II were fallowed in preparation for planting in 1972.

6. Collections and Receipts. None.

D. Control of Vegetation. None

E. Planned Burning.

Opposition by Marvin Jabs, a neighboring landowner, to our planned burn in the former grazing area in Unit II resulted in a congressional inquiry questioning our burning practices. The experimental nature of the burn was pointed out to Mr. Jabs and though not convinced of the value of fire as a management tool he took a "wait and see" attitude.

1. General.

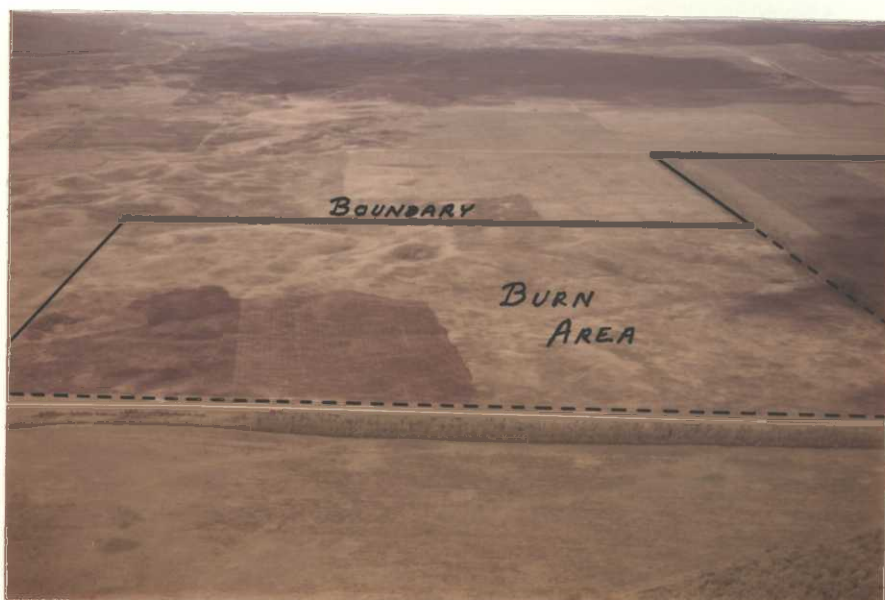
The only burning attempted was on the southeast "40" of the former 160-acre grazing area in Unit II. The purpose of the burn was to reduce bluegrass and buckbrush and encourage growth of native grasses. Permittee grazing was eliminated at the end of 1968 and an attempted burn in 1969 failed for lack of fuel. The southwest quarter of the grazing area was burned in 1970.

2. Conditions Prior to Burning.

The area was burned on May 20. Only .02" of rain had fallen since May 1 and soil moisture was low. The predominant vegetation was Kentucky bluegrass and buckbrush (mostly wolfberry with some buffalo-berry) with remnants of native grasses and forbs. At the time of the burn the bluegrass was just going to seed.

3. Conditions Following Burning.

Results of the burn were dramatic with vigorous growth of native grasses and forbs and reduced bluegrass competition. Big and little bluestem, blue grama, porcupine, green needle and several other natives responded spectacularly with greatly increased seed production. Leadplant became the most prominent forb and grew to twice the size of plants in the unburned area.



View of 160-acre experimental burning area - Goeke



Looking west along the north edge of the burn on 8/2 following burn on 5/20. The burned area is on the left. Big bluestem can be seen seeded out right to the edge of the burn while big bluestem plants present immediately across the line did not produce seed. - Goeke

F. Fires.

One wild fire occurred on the preserve August 8 near the shelter-belt in the east part of Unit II. The fire was apparently started by a cigarette thrown from a passing car and was pushed by strong west winds into the shelterbelt. A total of only 2.1 acres was burned but about 150 yards of the mature shelterbelt was badly damaged. Preserve personnel put out the fire with assistance from BIA.

The following day another fire occurred just south of Unit II. Strong northwest winds blew burning debris from the BIA dump onto the idle grassland surrounding the dump. The fire spread quickly to the southeast across BIA land grazed by Marvin Jabs. Fire equipment from BIA, the Minnewaukan fire department and two units from the preserve were needed to control the fast moving flames. Needless to say the loss of about 80 acres of Mr. Jabs fall pasture did not improve his attitude toward fire (See Sec. III E) although he did appreciate the preserve's part in controlling the fire on his land.

The fire missed preserve land by about 30 feet but the preserve could easily have suffered extensive damage if the wind had been from the southwest. When BIA built the dump for Ft. Totten in 1970, we suggested construction of a wire mesh fence around the area to control windblown debris. BIA felt the fence was unnecessary even though the dump is located in open wind-swept prairie. No fence has yet been constructed and the likelihood of a fire escaping and being pushed by the prevailing southwesterly winds onto the preserve is still high.

Personnel also assisted BIA on a building fire February 27, a grass fire near the preserve entrance April 15 and a larger brush and grass fire east of the preserve also on April 15. During the spring many fires are started by local residents but luckily so far none have burned onto the preserve.



View looking east across BIA dump fire that escaped 8/9.
If the wind had blown the fire to the northeast, the
preserve shelterbelt would have been badly damaged.

- Goeke

IV. RESOURCE MANAGEMENT

A. Grazing. None.

B. Haying.

Hay production was good and required only one cutting. The one cutting produced a total of 216 tons compared to the total of 300 tons in 1970. All hay was stacked and the preserve share was 9 stacks. Twelve hundred bales were carried over from 1970.

C. Fur Harvest. None.

D. Timber Removal. None.

E. Commercial Fishing. None.

F. Surplus Animal Disposal.

All surplus big-game animals are disposed of as carcasses sold to service clubs and organizations only. They are field-dressed by preserve personnel and delivered to the desired processor in Devils Lake or picked up at the preserve by the buyer. Prises in 1971 were \$280. for buffalo and \$110. for elk. Deer carcasses were donated to the North Dakota School for the Deaf at Devils Lake.

1. Buffalo.

8/26	1	2½ yr.M	Dazey American Legion	476#	\$280
10/27	1½	"	Wolford Wildlife Club	550	140
"	1½	"	Streeter Am.Leg. Aux.		140
"	1	"	Streeter American Legion	440	280
"	1	"	Streeter Lions Club	590	280
10/29	1	"	Garrison Boy Scouts	562	280
11/4	1	3½ yr. M	Jamestown Jaycees	620	280
"	1	3½ yr. F	Sheyenne Valley R & G	480	280
11/10	1	Unk. F	Carrington VFW	566	280
"	1	"	Dazey American Legion	430	266*
				(Ave. 524#)	\$2,520
				3 hides from 1970	15
				3 hides from 1971 (as of 3/1/72)	15
				Total \$2,550	

* Price reduced, underweight animal.

2. Elk.

10/29	1	Unk. F	Harvey Conservation Club	296#	\$110
11/4	1	"	Maddock Wildlife Club	301	110
"	1	1½ yr. M	Hamberg Wildlife Club	228	110
11/10	1	Unk. F	Buffalo L. Sportsmen Club	304	110
11/11	1	1½ yr. M	Grand Forks Wildlife Club	250	110
11/18	1	"	Fishlake Wildlife Club	156	55*
11/22	1	"	" " "	140	55*
11/22	1	Unk. F.	Lehr Wildlife Club	250	110
				8	(Ave. 241#)
					\$770
4 hides from 1971 (as of 3/1/72)					10
				Total	\$780

* Small, poor quality animals sold at half price.

3. White-tailed Deer.

During the fall 4 deer, 2 buck fawns and 2 adult does, were removed and donated to the North Dakota School for the Deaf in Devils Lake.

V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. Forest Tent Caterpillar Defoliation.

Forest tent caterpillar defoliation occurred for the third consecutive year since the current outbreak began in 1969. Defoliation occurred over the entire preserve but damage was generally less severe than in 1970. The worst areas suffered only about 30% defoliation.

Entomologists from North Dakota State University are studying the local forest tent caterpillar activity. A graduate student has worked on the problem for the last two years and reported that natural parasitism of the caterpillars was much higher in 1971 than in 1970. Apparently biological controls are catching up to the tent caterpillar populations and will bring it under control without human assistance.

B. Variable Oak Leaf Caterpillar Defoliation.

Defoliation by variable oak leaf caterpillars was first noticed during the late summer of 1970 and damage was considered moderate with 25-50% defoliation in some areas. In 1971 they caused severe defoliation on approximately 1000 acres of preserve and adjacent BIA lands. Damage was common throughout the preserve but was severe on about 234 acres in three areas. American basswood was the primary species affected with 90-100% defoliation in the areas of severe damage. A survey of the area on September 8 with entomologists from the U.S. Forest Service, North Dakota State University, the State of North Dakota, BIA and preserve personnel resulted in a recommendation that no control action be taken.

Although there was substantial damage to the esthetics of the auto tour route and considerable damage along the nature trail, the defoliation was not considered an immediate threat to the life of the trees. There is, however, concern that the combined defoliation by forest tent and variable oak leaf caterpillars may cause permanent damage.

The following is quoted from the U.S. Forest Service Insect and Disease Report, "Status of the Variable Oak Leaf Caterpillar in North Dakota - 1971", by W. M. Ciesla. "Late summer defoliation, such as that caused by the variable oak leaf caterpillar, has little detrimental impact other than a temporary loss of scenic values. A portion of the area near Devils Lake has also been infested by the forest tent caterpillar in recent years. This insect, which removes foliage early in the growing season, is known to cause

growth loss, top kill, and mortality after successive defoliations. The combined activity of the forest tent caterpillar and variable oak leaf caterpillar may have a detrimental effect on basswood and other hardwoods in the Devils Lake area. This office will plan to monitor the infestations in 1972. No control is recommended at this time."

C. Wood Duck Banding Program.

A banding program was initiated in 1971 in an attempt to determine if there is a relationship between the preserve's increased wood duck use and the growing flock of wood ducks using Arrowwood NWR. Forty-six wood ducks were banded out of a quota of 50 and 37 of the 46 or 80% were males. In 1970 the percentage of males based on observations was estimated at 75-80% also. No banded birds other than retraps were caught. Other ducks banded included 26 blue-winged teal, 21 mallards and 1 redhead.

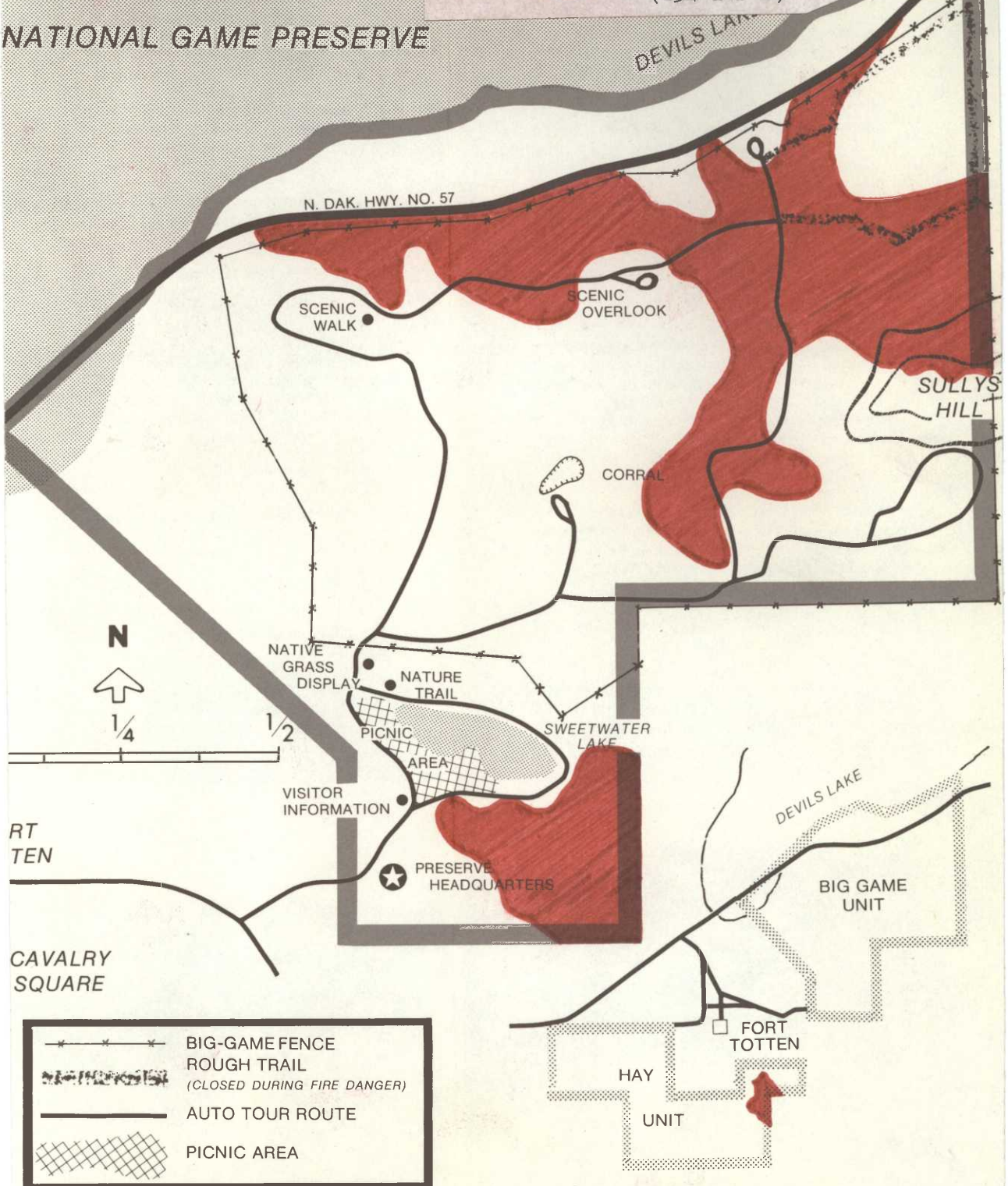
Sullys Hill

NATIONAL GAME PRESERVE

Variable Oak Leaf Caterpillar Defoliation



Severe damage
(23 1/4 acres)



RT
TEN

CAVALRY
SQUARE

- *—*—*— BIG-GAME FENCE
- X—X—X—X— ROUGH TRAIL
(CLOSED DURING FIRE DANGER)
- AUTO TOUR ROUTE
- X—X—X—X— PICNIC AREA

DEVILS LAKE

BIG GAME
UNIT

FORT
TOTTEN

HAY
UNIT



View looking west toward preserve. The east boundary of the preserve is about where the road along the lake disappears. The gray area was defoliated by variable oak leaf caterpillars.

- Goeke



Variable oak leaf caterpillar defoliation of American basswood along tour route - Goeke



Variable oak leaf caterpillar. Actual size is about $1\frac{1}{2}$ " before pupation. They are most active in late August and early September. - Goeke



Variable oak leaf caterpillars overwinter in this reddish prepupal stage in the leaf litter and topsoil. - Goeke

VI. PUBLIC RELATIONS

Summary of 1971 Public-Use-Related Outputs

Output	Units	RBU's
Interpretation		
Foot Trails	1,116 AH	83,700
Auto Routes	34,150 AH	2,572,475
Exhibits/Demonstrations	110 AH	3,000
Other Programs	138 AH	10,350
Education		
Environmental Education	172 AH	25,800
Professional Serv. Rendered	35 AH	8,750
Recreation, W/W Oriented		
Other (Fruit Picking)	88 AH	880
Wildlife Observation	335 AH	16,750
On Ref. W/W Nonconsump. Rec.	2,886 AH	46,685
Off Ref. W/W Nonconsump. Rec.	5	5,000
Recreation, Non W/W Oriented		
Picnicking	9,890 AH	9,890
Other	366 AH	366
Total Refuge Benefit Units		2,783,646

A. Recreational Uses.

With the preservation of buffalo, elk and white-tailed deer assured, Sullys Hill was scheduled for closure in 1965. The resulting public outcry effected a reevaluation of Sullys Hill and resulted in the preserve's continuation based largely on its public use. Management emphasis has now switched from chiefly preservation to emphasis on outdoor education and wildlife-oriented recreation. A definite measure of the success of this management is the amount of visitor use in close conjunction with the quality of the educational-recreational opportunities provided.

Total recreational visits for the preserve during 1971 were 54,573, an increase of 29% over 1970 and an increase of 117% over 1967, when the self-guided tour route was first opened.

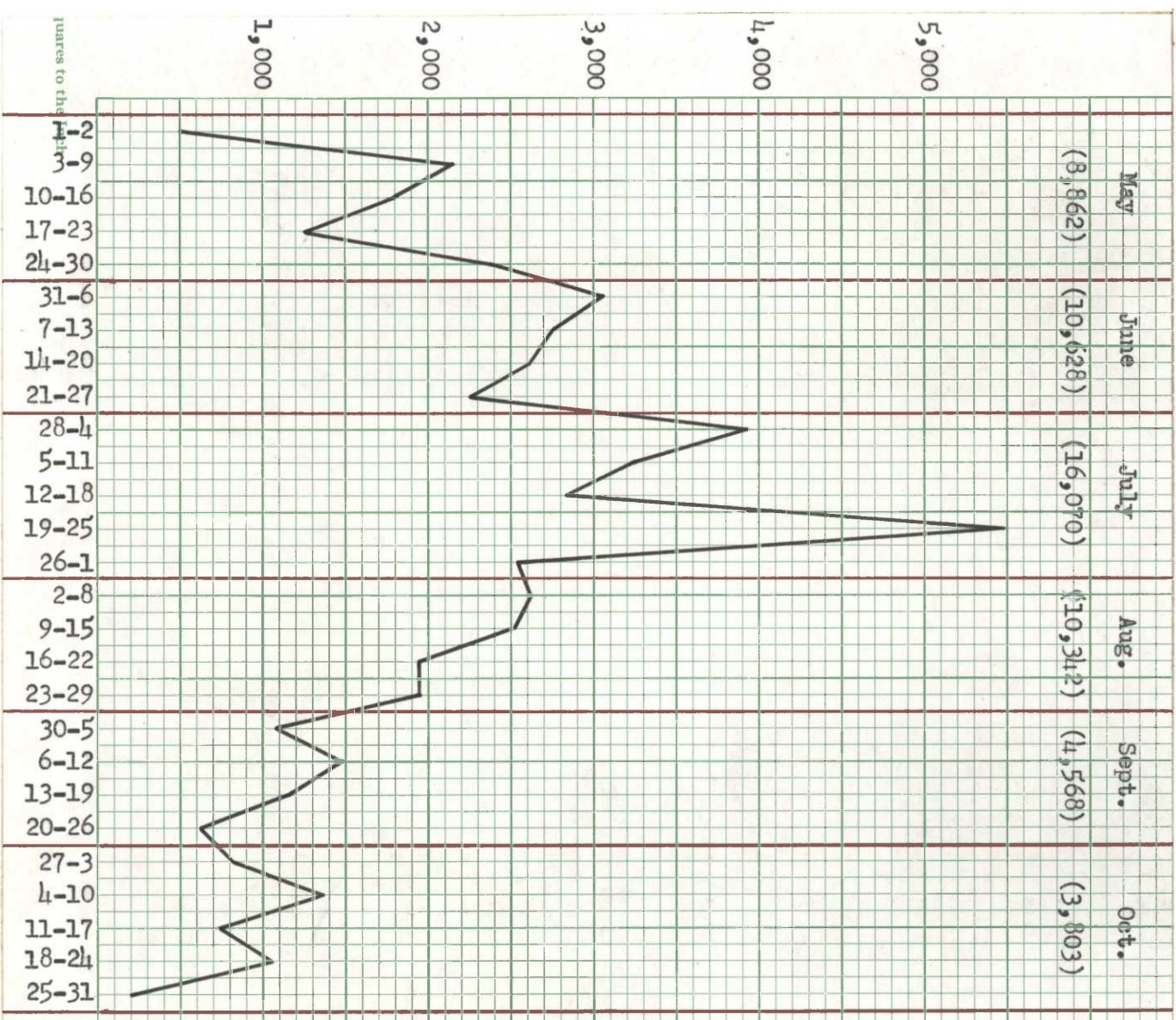
Visitor numbers are based on data provided by an automatic traffic counter that counts all cars entering the preserve and another that counts all cars using the tour route. Over 45,300 visitors (83%) used the auto tour route. The peak visitor day during 1971 occurred on July 25, the last day of the annual Ft. Totten Days Indian celebration, when 2,811 people visited the preserve.

1971 Summary for Primary Visitor-Use Months

April May June July Aug. Sept. Oct.

Visitors: 102 8,862 10,628 16,070 10,342 4,568 3,803
Peak Day: 35 919 1,428 2,811 1,124 513 560

1971 Weekly Visitor Use



A major effort was made to complete the renovation of the recreation area begun in 1970. Development work accomplished is detailed in Section III. The change to one-way traffic flow through the east part of the picnic area improved parking efficiency and eliminated traffic stalemates during congested periods. Widening and straightening of the road along the west side of the picnic area also improved traffic flow and visitor safety. Establishment of designated parking areas over the last two years has eliminated most of the hazardous parking and increased parking efficiency and capacity. The new centrally located comfort station will reduce maintenance time formerly required for the four old structures. When removal of the old toilets is completed next spring, appearance of the area will also be greatly improved.

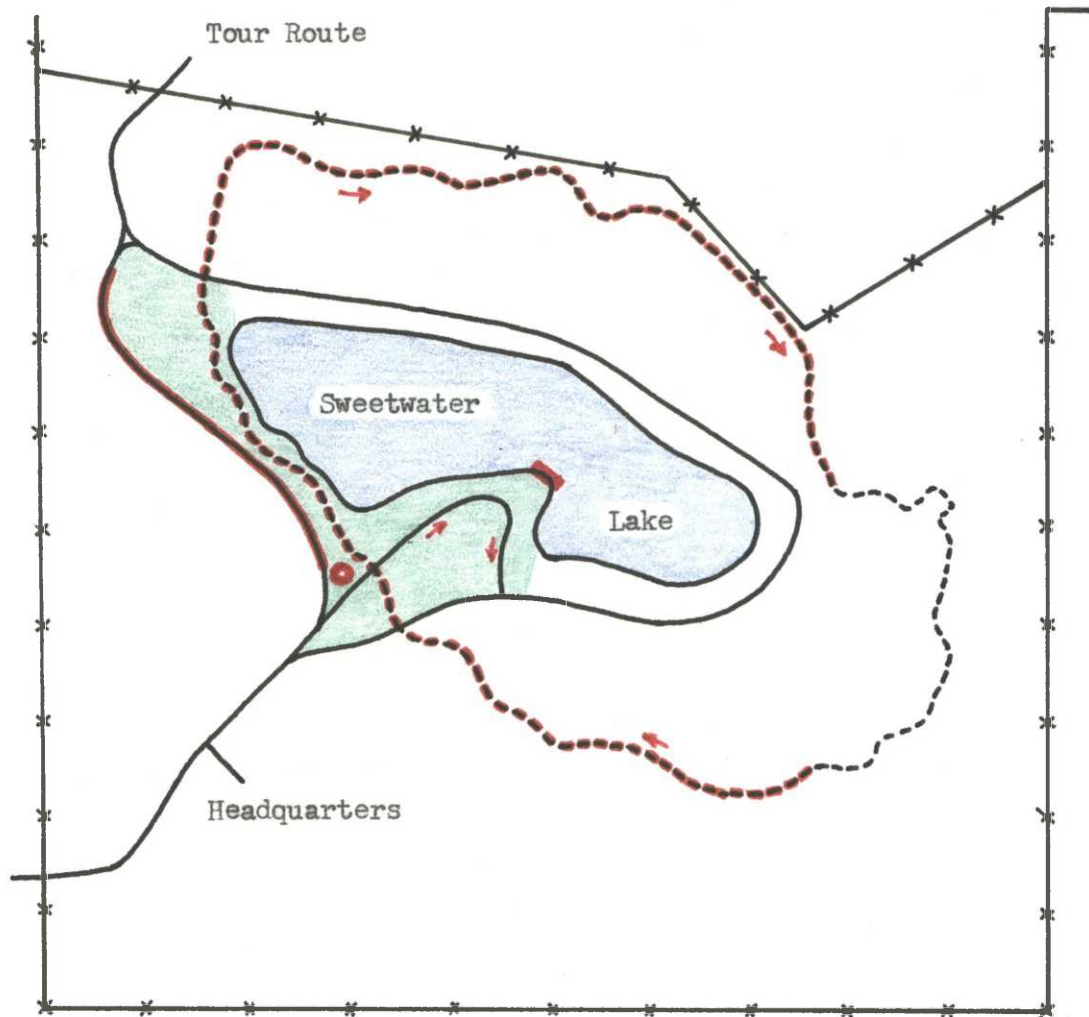
At the end of June the newly lengthened nature trail was opened to the public. Prior to opening final clearing of the new sections was completed, the foot bridge was rebuilt to facilitate mowing and interpretive signs were erected. Initial use by individuals and school groups has been good. Additional signs and improvements are planned for 1972.



A preserve float was entered in the annual Ft. Totten Days parade on July 25. The float was viewed by 3,000 people.

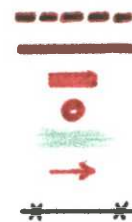
- Goeke

Sweetwater Lake Recreation Area



Key

- Nature trail finished in 1971
- Road widened and rebuilt
- Waterfowl observation deck
- Location of new comfort station
- Picnic area
- One way
- Big-game fence



After analyzing the year's visitor use figures several interesting facts became apparant.

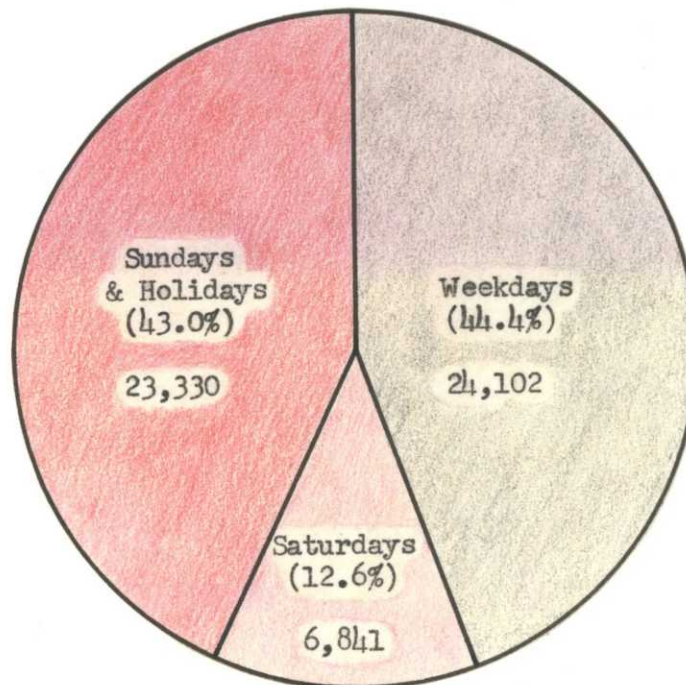
1. The visitor use increase of 29% in 1971 was 7% higher than the 22% increase during 1970. It was also 7% higher than the use that was projected for 1971 during the objectives setting process. The 29% preserve increase was also comparable to the 1971 average increase of 28% on the eight state parks in North Dakota (N.D. Park Service data.) If the same rate of increase or higher occurs in 1972, we can expect over 70,000 visitors.
2. With the exception of June 27 when it rained, visitor totals on all Sundays of June and July and the first Sunday of August exceeded 1,000. On Sunday, July 4, the total was 2,115 and on Sunday, July 25, the total was 2,811. The visitor total also exceeded 1,000 on Saturday, July 24. Often on the days of 1,000 plus visitors facilities were crowded and at times overcrowded.
3. Of the 54,273 people who used the preserve during the 6-month visitor season 55.6% were present on weekends and holidays when the preserve office was closed and all personnel were off duty. About half of the remaining 44.4% were evening visitors who came after duty hours. This means that over 75% of the total visitors or about 41,000 used the preserve when administrative facilities were closed.

Problem

The rapid improvement of the water quality of Devils Lake (the water level has risen 10.15' since 1968) and the lake's fast growing fish population resulted in a tremendous increase in recreational use of the area in 1971. In late October the Tri-County Park Board purchased a 234-acre area at Ziebach's Pass only six miles from Sullys Hill. The recreational development planned for the land in 1972 is sure to have an impact on the preserve by attracting additional people to the area. Also, the Devils Lake Chamber of Commerce is developing a tourist information and recruiting program that leans heavily on Sullys Hill and Fort Totten as main attractions. All this is likely to result in a heavier-than-anticipated visitor load at Sullys Hill.

With the increased visitor use expected in 1972 and the even heavier use in ensuing years, visitor-use-quality problems will increase rapidly. Also, visitor and grounds protection responsibilities must be met 7-days-a-week during much of the visitor season. Almost all visitor use is confined to the 4-mile auto tour route, about 8 acres in the picnic area, and the nature trail.

1971 Daily Visitor Use



On days when visitor totals exceed 1,000 preserve facilities ~~are~~ sometimes overcrowded. This photograph was taken on July 25 when the visitor total was 2,811. Thirteen cars were waiting at one time to see the buffalo. Just like Yellowstone! - Goeke

As was demonstrated when the preserve was threatened with closure in 1965, public use is the preserve's justification for continued existence. The time is rapidly approaching when limitations on use will be required to assure a satisfactory quality of experience. Use-quality standards for Sullys Hill must be refined and the mechanics for limiting certain uses must be determined. Establishment of plans for visitor contact and protection of grounds and visitors during off duty hours are also badly needed.



Children and adults enjoy feeding the geese. Kids also get a kick out of feeding bits of bread to the swarms of minnows near the shore.
- Goeke

B. Refuge Visitors.

<u>Date</u>	<u>Name</u>	<u>Affiliation</u>	<u>Purpose</u>
2/23	Gerry Tschider	State NYC Superv. Mandan	Discuss NYC Program
2/24	Fritz Craig	Sand Lake NWR	Deliver Wetlands' D-6
4/19-20	Dick Johnston	BSFW, RO, Minneapolis	Preconstruction meet.
5/11-13	Dick Johnston	BSFW, RO, Minneapolis	Construction inspection
5/19	Jerome Tomhave	BIA Superv., Ft. Totten	Raise dam near entrance
	Harold Annette	BIA Road Eng., Ft. Totten	" " " "
5/20	Richard Peterson	Benson Co. Farmers Press	Control burn information
6/16	Dr. Richard Frye	NDSU, Fargo	Tent caterpillars
	Dave Ramsee	NDSU, Fargo	" "
	Dick Johnston	BSFW, RO, Minneapolis	Water system plans
6/30	Bill Brandvic	Assoc. State Ent., Fargo	Tent Caterpillars
	Scott Tunnock	USFS, Missoula, Mont.	" "
	John Stein	USFS, Bottineau	" "

7/4-5	Tom Sechrist	USCMA, Devils Lake	Enforcement patrol
7/12	Don Snider	Sand Lake NWR	Visit
7/24-25	William McClure	USCMA, Bismarck	Enforcement patrol
	Lyman Reynoldson	USCMA, Minot	for Ft. Totten Days
	Tom Sechrist	USCMA, Devils Lake	" "
7/28	Joe Ritchie	BSFW,RO, Minneapolis	Water system plans
	Carl Brashears	BSFW,RO, Minneapolis	" " "
7/29-30	Harlan Giese	Mont. Dak. Util, Devils L.	Locate Water lines
8/2	Gerry Tschider	State NYC Superv. Mandan	NYC Program
8/10	Chet Lund	BSFW,RO, Minneapolis	Real Prop. Insp.
8/17-18	Dick Johnston	BSFW,RO, Minneapolis	Const. final insp.
8/31	Dale Sutherland	GAO, Denver, Colo	Tour
9/8	William Ciesla	USFS, Missoula, Mont.	V. oak leaf caterp.
	Tim Hayls	Pilot, Missoula, Mont.	" " " "
	John Lundquist	NDSU, Fargo	" " " "
	Dr. Richard Frye	NDSU, Fargo	" " " "
	Dave Ramsee	NDSU, Fargo	" " " "
	Bill Brandvic	Assoc.St. Ent., Fargo	" " " "
	Ken Bajema	BIA, Ft. Totten	" " " "
10/15	John Akin	Kulm WMD	Visit
	Eric Dornfeld	Audubon WMD	"
10/18	John Carlsen	BSFW,RO, Mpls.	"
12/3	Beth Johnson	Exten. Home Ec. Ft. Totten,	4-H programs

The following were frequent visitors during the year:

Tom Sechrist - BSFW, USCMA, Devils Lake
 Jerry Shoemaker - BSFW, Wildlife Services, Lakota
 Dave Ramsee - grad. student entomology, NDSU, Fargo.
 Local BIA, PHS and OEO personnel, Ft. Totten.
 Local permittees, neighbors and tourists.

C. Refuge Participation.

1. Presentations.

- 2/15 Nelson demonstrated construction of wood duck houses to Devils Lake Boy Scout leaders and preserve donated materials for 10 houses. (10 attended).
- 3/16 Goeke attended Killarney Game & Fish Association meeting in Killarney, Manitoba, with Swenson and Patten. Swenson presented Wetland Management slide series. (40 attended)
- 6/30 Goeke gave welcoming talk to N. Dak. Farm Bureau Women meeting at Ft. Totten. (350 attended).
- 10/26 Goeke gave Sullys Hill slide talk to Kiwanis, Devils Lake. (24 attended)
- 11/14 Goeke gave Sullys Hill slide talk to Methodist Father and Son Banquet, Devils Lake. (70 attended)
- 11/29 Goeke gave Sullys Hill slide talk to Circle K Club at Lake Region Jr. College. (15 attended)

2. Tours.

- 3/3 Oberon High School biology class (12) - Goeke.
- 4/12 Emerado and Devils Lake Baptist Church youth groups (35)-Nelson.
- 5/4 Ft. Totten Elementary School 1st grade (19) - Goeke.
- 5/14 St. Michaels Elementary School 5th grade (40) - Goeke.
- 5/21 Our Savior's Lutheran School, Jamestown, 7th & 8th grade honor students (6) - Nelson.
- 6/15 Ft. Totten - Sullys Hill Association (25) - Goeke.
- 6/25 Garrison Diversion Unit Press Tour (50) - Goeke & Swenson.
- 9/1 St. Michaels Elementary School teachers (5) - Goeke.
- 9/15 Ft. Totten Head Start children (18) - Nelson.
- 9/16 Tokio Head Start children (25) - Nelson.
- 9/20 N. Dak. Travel Bureau Press Tour (5) - Goeke.
- 9/23 Devils Lake Prairie View Elementary School 6th grade (62) - Nelson.
- 9/23 Lakota Elementary School 4th grade (50) - Nelson.
- 9/28 Devils Lake Central School 5th & 6th grades (32) - Nelson.
- 10/9 Devils Lake Girl Scouts (9) - Goeke.
- 12/4 Manitoba School for the Deaf, Winnipeg (30) - Goeke.

Seven additional tours were conducted for a total of 24 other visitors.

3. Meetings.

- 1/8-9 Goeke attended winter meeting of N. Dak. Chapter of the Wildlife Soc. at Bismarck
- 3/18-19 Goeke attended objectives meeting in Jamestown.
- 5/25-27 Goeke attended objectives review in Jamestown.
- 6/9 Goeke and GMA Sechrist met with BIA investigator Price at Ft. Totten to discuss preserve law enforcement plans.
- 6/10 Goeke and GMA Sechrist met with U.S. Magistrate Olson and Benson County Sheriff Burdick in Minnewaukan to discuss preserve law enforcement plans.
- 6/15 Goeke attended Ft. Totten - Sullys Hill Association meeting at Ft. Totten. Area problems were discussed and new officers elected. Goeke was elected to Board of Directors.
- 6/22 Goeke met in RO with Swenson, Carpenter, Key and Adams, (ME) to discuss preserve law enforcement plans.
- 6/29 Goeke met in Devils Lake with Swenson and GMA's Sechrist, McClure and Reynoldson to discuss preserve law enforcement plans.
- 7/8 Goeke attended objectives meeting at J. Clark Salyer NWR.
- 7/27 Goeke attended objectives meeting at Audubon NWR.
- 9/14 Goeke and Nelson attended easement drainage violation trial at Grand Forks.
- 9/21 Goeke and Nelson attended 1971 Hunting Regulations meeting at the NFWRC, Jamestown.
- 9/27-30 Goeke attended Systems Workshop at Jamestown.
- 12/13 Goeke attended with Board of Ft. Totten-Sullys Hill Assoc. Tribal Council and Devils Lake Chamber of Commerce to discuss local planning and wishes of Sioux Tribe.

4. Newspaper, Radio & Other Articles.

During the year three news releases were prepared and issued. Numerous other articles and references to the preserve were generated as a result of the Garrison Diversion and North Dakota Travel Bureau press tours and independent visits by the local press. The preserve also assisted the Devils Lake Daily Journal in preparation of an 8-page special supplement entitled "Sullys Hill and Cavalry Square Top Lake Region Attractions." Over half of the special dealt with the preserve. A copy is appended inside the back cover of this report.

On July 6 Manager Goeke appeared on Devils Lake radio station KDLR's program "Chamber Catter" for a 10-minute interview dealing with the preserve.

Two scientific notes were published in the June, 1971, issue of the North Dakota Natural Science Society's Prairie Naturalist. Copies are appended.

5. Community.

Manager Goeke and Biological Technician Nelson are members of the Ft. Totten Volunteer Fire Department and the Lake Region Sportsmens Club. Both also bowl on the Fish and Wildlife Service bowling team in Devils Lake. Nelson is active in the International Order of Odd Fellows and the Sons of Norway, both in Devils Lake.

D. Hunting. None

E. Violations.

Two violations on the preserve were prosecuted in U.S. Magistrate's Court.

7/25/71 Leander G. Finley, Mandaree, was apprehended by USQMA's McClure, Sechrist and Reynoldson for littering -\$25 fine.

10/3/71 Timothy S. Longie, St. Michaels, was apprehended by Mgr. Goeke for hunting on preserve land near Ft. Totten Bay - \$40. fine.

Three hunting violations occurring within the Devils Lake WMD were initiated by Biol. Tech. Nelson with Biol. Tech. Lee from the WMD. All were prosecuted in U. S. Magistrate's Court.

- 10/21/71 George D. Crossen, Grand Forks; retrieving a goose on Snyder Lake NWR - \$50 fine.
- 10/25/71 Joe D. Mitsell, Beulah; trespass on Snyder Lake NWR - \$50 fine.
- 10/25/71 Bruce G. Lavell, St. Paul, Minn; trespass on Snyder Lake NWR - \$50. fine.

Preserve personnel also assisted WMD personnel on other violations listed in the Devils Lake narrative report.

With the increasing visitor load, public use violations are our biggest concern. During 1971 steel gates were badly damaged five times, at least one elk may have been shot and a swan received a broken neck and had to be destroyed. Increased patrol was necessary to control vehicle use, littering, vandalism and numerous other problems associated with public use.

In anticipation of the problems expected meetings were held with local law enforcement officials and basic plans were made to handle violators. North Dakota USGMA's provided welcome assistance during the Fourth of July and Ft. Totten Days weekends. Most violators during the year were issued warnings or expelled from the preserve. The fact that no serious problems occurred was probably due, at least in part, to the increased patrol efforts.

There are plans to purchase additional equipment including a portable radio unit capable of contacting the BIA police at Ft. Totten and the Benson County Sheriff at Minnewaukan. The preserve presently has no radios with which to request assistance in an emergency.

F. Safety.

During the year there were no lost-time accidents or vehicle accidents by Sullys Hill personnel, NYC's, or tribal welfare employees. The station recorded at the end of the year was 2,572 calendar days without a lost-time accident to Bureau employees. Goeke and Nelson completed 8 hours of defensive driving refresher training begun in 1970. The following were topics of joint safety meetings held during the year with the Devils Lake WMD.

1. Safety Meetings.

- 1/18/71 Adverse Weather Driving*
- 6/1/71 Safety on the Job
- 7/9/71 Emergencies in the Making*
- 7/27/71 Tire Hydroplaning*
- 8/27/71 Safety Facts About Crossing Tracks*
- 9/7/71 Devils Lake Fire Department demonstration
- 10/1/71 Final Factor*
- 10/28/71 A,B,C & D's of Portable Fire Extinguishers

11/1/71 Electrical Hazards in the Home
12/17/71 Winter Safety

* Defensive Driving refresher training.

2. Safety Accomplishments.

- a. Furnaces in quarters #1 and # 2 and the office/shop building received annual checks and cleaning.
- b. All fire extinguishers were checked and recharged.
- c. All playground equipment was overhauled and the giant stride was removed.
- d. Electrical wires entering the goose house were raised 4' to prevent possible contact with heavy equipment.
- e. A new 220 v. fuse box was installed in the pump house.
- f. Two speed control bumps were constructed on the entrance road.

VII. OTHER ITEMS

A. Items of Interest.

In 1971 continued participation in the local Neighborhood Youth Corps Program has proven highly valuable to preserve operations. During the year 10 local Indian boys working as NYC's put in a total of 1,959 hours of work on the preserve. If the preserve paid these boys at the same rate as our other summer laborers, it would have cost us over \$5,955. NYC wages are paid by the Department of Labor and the cost to the preserve in supervisory and administrative time is a small price to pay for the work accomplished.

Much preserve work was also accomplished by Devils Lake WMD personnel, particularly Jerry Lee and Mike Floyd. WMD personnel seeded 20 acres of grass in Unit II, helped with the gopher control, mowed 15 acres of brush and helped with a variety of other jobs.

In addition to the activities already reported Sullys Hill personnel assisted the Devils Lake WMD with their annual aerial easement compliance check and with follow-up ground checks of suspected violations. Preserve personnel also painted the Lake Alice water control structure and built and erected two fence stiles and two information signs at Pelican Lake WPA.

The North Dakota Highway Department finally erected two new directional signs along Highway 57. The signs say simply "Sullys Hill" with an arrow into Ft. Totten. Local highway department officials refused to add the words "National Game Preserve" because they felt this wording would not attract visitors. At least they removed the old sign that said "Sullys Hill Park" and erected the new signs at better locations.

On December 9 a legal case involving a local Indian hunting on a portion of the preserve near Devils Lake was heard in U.S. Magistrate's Court in Rugby. The case was prosecuted by Ass't U.S. Attorney Lunn Crooks. During the proceedings it was pointed out that the portion of the preserve boundary encompassing part of Ft. Totten Bay (photograph page 5) is probably not the fixed line now posted, but is probably the line created by the rising waters of Devils Lake. If this is true, it means an immediate reduction of about 26 acres and eventual loss of about 40 acres when the lake is stabilized at the proposed Garrison Diversion level. The matter is being considered by the Field Solicitor.

Highway 57 between Devils Lake and Ft. Totten probably has one of the highest accident rates per number of cars using the road of any highway in North Dakota. On New Year's Eve a two car collision on a preserve section of the road just east of Ft. Totten Bay claimed four lives and seriously injured three other persons. Ironically one of the cars was driven by Biological Technician Nelson's brother Einer accompanied by his wife and daughter. The other car, containing four boys from Ft. Totten, lost control on the turn and was hit broadside by the Nelson car. Three of the boys and the Nelson's girl were killed. There were indications that the four boys had been drinking but it is unknown whether autopsies were performed.

Locally "drunk driving" is a common occurrence, many of the "junkers" being driven couldn't come close to passing a state highway inspection, and Indians driving on the reservation are not required to have a driver's license. These factors individually and often in combination are a constant threat to residents and visitors to the area.

B. Credits.

David E. Goeke - Prepared and assembled the entire report.

Omer N. Swenson - Edited entire report.

Mary C. Roemmich - Typing.

Photographs as credited.



Sullys Hill permanent personnel (l. to r.):
Refuge Manager, David E. Goeke; Biological
Technician, Irvin A. Nelson. - Lee

Submitted by:



David E. Goetze
Refuge Manager
April 3, 1972

Approved by:



Omer N. Swenson
Wetlands Manager
April 3, 1972

Approved, Regional Office:

Date: **APR / 3 1972**



Regional Refuge Supervisor

ASSST



THE PRAIRIE NATURALIST

volume 3

no. 2

Note

ROBINS CATCHING AND EATING MINNOWS—During the winter of 1970-71 a small flock of approximately 20 robins (*Turdus migratorius*) overwintered on the Sullys Hill National Game Preserve near Fort Totten, North Dakota. Throughout December and the first week of January the robins were frequently observed at close range catching and eating minnows from a small patch of open water near the inlet of the preserve's Sweetwater Lake. The opening in the ice was crowded with thousands of minnows making capture easy. The birds were not just eating the occasional dead minnows that floated along the edge of the ice but were actually observed pulling live minnows from the water. Often the small fish were dropped and could be seen flopping on the ice before being eaten. The robins had to switch to a diet of frozen berries when drifting snow finally closed the hole during the second week of January. —David E. Goeke, Sullys Hill National Game Preserve, U.S. Bureau of Sport Fisheries and Wildlife, Fort Totten, North Dakota 58335.

GLAUCOUS GULL IN BENSON COUNTY, NORTH DAKOTA—On November 25, 1970, I observed a glaucous gull (*Larus hyp. boreus*) near the south shore of Devils Lake one-half mile east of Fort Totten in Benson County, North Dakota. The bird was first observed at a distance of about 50 feet under good light conditions. There is no known published record of previous sightings of this species in North Dakota, but a bird identified as a glaucous gull was observed in 1967 on Long Lake National Wildlife Refuge in Burleigh County by refuge manager Karl Hansen (personal communication). In North America this species breeds from the arctic coasts and islands of northern Alaska, Canada and Greenland south to Hudson Bay and Labrador. It winters along the Pacific coast as far south as southern California and along the Atlantic coast to New York and occasionally to Georgia. A few winter as close as the Great Lakes and perhaps rare individuals wandering farther inland account for the observations in North Dakota. Only four days after this North Dakota record, on November 29, 1970, seven glaucous gulls were observed on Lake Superior at Duluth, Minnesota (1971, American Birds, 25:63), a straight-line distance of about 330 miles from Devils Lake. —David E. Goeke, Sullys Hill National Game Preserve, U.S. Bureau of Sport Fisheries and Wildlife, Fort Totten, North Dakota 58335.

3-1750

Form NI

(Rev. March 1953)

W A T E R F O W LREFUGE Sallys Hill NCPMONTHS OF January TO April, 19 71

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

No Waterfowl Present

3-1-70a

Cont. NR-1

(Rev. March 1953)

WATERFOWL (Continuation Sheet)

REFUGE Sallys Hill NHPMONTHS OF January TO April, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods:Estimate seen: total
	11	12	13	14	15	16	17	18		
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard					19	12	14	15	420	
Black										
Gadwall								1	7	
Baldpate										
Pintail										
Green-winged teal								6	42	
Blue-winged teal										
Cinnamon teal										
Shoveler								2	14	
Wood							3	6	63	
Redhead								2	14	
Ring-necked								2	14	
Canvasback								2	14	
Scaup						120	60	200	2,660	
Goldeneye										
Bufflehead								6	42	
Ruddy										
Other										
<u>Coot:</u>							2	2	28	

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans				Principal feeding areas <u>Pt. Totten Bay, and</u>
Geese				<u>Sweetwater Lake</u>
Ducks	3,250	242		Principal nesting areas
Coots	28	2		
				Reported by <u>David E. Cooke</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1750

Form N

(Rev. March 1953)

WATERFOWLREFUGE Sullys Hill NHPMONTHS OF May TO August, 19 71

(1) Species	Weeks of reporting period ⁽²⁾									
	5/5	5/12	5/19	5/26	6/2	6/9	6/16	6/23	6/30	7/7
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	11	9	10	12	14	6	9	8	6	6
Black		2	3	3	2	2	2	2		
Gadwall			2	2	2	2	2	2		
Baldpate					2	2	2	2	2	2
Pintail					1	2	2	2	2	2
Green-winged teal	14	15	11	10	12	9	6	12	4	7
Blue-winged teal										
Cinnamon teal										
Shoveler	9	4	1	1	1					
Wood	6		2	3	3	4	5	2	1	
Redhead	2		2	2	4					
Ring-necked										
Canvasback	6	6	3	2	2	2		5		
Scaup	20		2							
Goldeneye										
Bufflehead										
Ruddy										
Other										
	3	14	12	11	9	18	17	19	18	10
Coot:										

3 - 10a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Sallys Hill NWRMONTHS OF Nov TO August, 19 71

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods:Estimate seen: total	
	7/11 11	7/21 12	7/28 13	8/4 14	8/11 15	8/18 16	8/25 17	8/31 18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	6	8	8	11	12	35	46		1,519		
Black											
Gadwall		3	12	7		10	10		336		
Baldpate							15		175		
Pintail	17	14	10	21	30	62	90		1,848	1	6
Green-winged teal									7		
Blue-winged teal	23	30	45	110	275	300	160		7,301	3	9
Cinnamon teal											
Shoveler	3					10	10		273		
Wood		2		2	2	56	45		951		
Redhead									70		
Ring-necked											
Canvasback									182		
Scaup									224		
Goldeneye											
Bufflehead									14		
Ruddy											
Other											
Coot:	12	15	14	15	17	160	345		4,963	4	12
				(over)							

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	0	0	0
Geese	0	0	0
Ducks	12,880	463	15
Coots	4,963	345	12

SUMMARY

Principal feeding areas Pt. Totten Bay of Devils Lake
and Sweetwater Lake.

Principal nesting areas Unit I hay meadow and shore of
Sweetwater Lake.

Reported by David E. Gocke, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

WATERFOWL

REFUGE Sallys Hill NGP.

MONTHS OF September TO December, 19 71

(1) Species	(2) Weeks of reporting period									
	9/1 1	9/8 2	9/15 3	9/22 4	9/29 5	10/6 6	10/13 7	10/20 8	10/27 9	11/3 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										80(1da)
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	45	95	45	80	25	25	80	150	225	125
Black		1								
Gadwall	25	10	8	12						
Baldpate	15									
Pintail	60	20	30	20	30	30	35	25		
Green-winged teal										
Blue-winged teal	160	100	55	30	9					
Cinnamon teal										
Shoveler	15	25	5	6			15			
Wood	40	40	25	16	5	7	3	3	3	3
Redhead	5	5	2	12	8	8	20	10	15	15
Ring-necked										
Canvasback										
Scaup							15	35	75	50
Goldeneye										1
Bufflehead							6	15	5	5
Ruddy					1	1	20	30	25	10
Blue hooded Merganser										1
Coots	1100	370	15	18	14	18	20	15	5	2
Coot:										

3 - 700a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Sallys Hill NGP.MONTHS OF September TO December, 19 71

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods:Estimate seen : total
	11/10 11	11/7 12	11/24 13	12/1 14	12/8 15	12/15 16	12/28 17	12/29 18		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada									80	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	15	8							6,426	
Black									7	
Gadwall									385	
Baldpate									105	
Pintail									1,750	
Green-winged teal										
Blue-winged teal									2,478	
Cinnamon teal										
Shoveler									315	
Wood									1,015	
Redhead									700	
Ring-necked										
Canvasback										
Scaup									1,225	
Goldeneye									7	
Bufflehead									217	
Ruddy									651	
Worm-eating H. Merganser									7	
Coot:									11,039	

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans				Principal feeding areas <u>Ft. Totten Bay of Devils Lake</u>
Geese	80	80		<u>and Sweetwater Lake.</u>
Ducks	15,288	365		Principal nesting areas <u>Unit I hay meadow and shore of</u>
Coots	11,039	1,100		<u>Sweetwater Lake</u>
				Reported by <u>David E. Gooka</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751
Form NR-1a
(Nov. 1945)

Sullys Hill NGP

MIGRATORY BIRDS
(other than waterfowl)

Refuge..... Months of **January** to **April** 195**1**

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Wetland and Marsh Birds:</u>	30	4/30	30	4/30	30	4/30				
Double-crested Cormorant	1	4/20	10	4/30	10	4/30				

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons:</u>									
Mourning dove	2	4/12	4	4/30	4	4/30			
White-winged dove									
IV. <u>Predaceous Birds:</u>									
Golden eagle									
Duck hawk									
Horned owl	1	1/1	2	3/1	1	4/30			
Magpie	2	1/1	3	2/15	1	4/30			
Raven	1	4/3	1	4/3	1	4/5			
Crow	2	1/1	200	3/21	4	4/30			
Screech Owl	1	2/3	1	2/3	1	3/21			
Sharp-shinned Hawk	1	3/15	1	4/6	1	4/30			
Red-tailed Hawk	1	3/30	146	4/4	1	4/30			
Broad-winged Hawk	1	4/29	1	4/29	1	4/29			
Rough-legged Hawk	1	4/28	1	4/28	1	4/28			
Bald Eagle	1	4/2	1	4/2	1	4/2			
Marsh Hawk	1	3/30	3	3/31	1	4/26			
Osprey	1	4/25	2	4/30	2	4/30			
Reported by						David E. Quake			

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1751
Form NR-1a
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sullys Hill NHP

Months of May to August 1967

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Western Grebe	3	5/27	6	8/1	2	8/31				
Pied-billed Grebe	1	5/1	3	8/21	2	8/31				
White Pelican	10	5/1	35	5/18	2	8/31				
Double-crested Cormorant	10	5/1	25	6/17	3	8/31				
Great Blue Heron	1	5/2	18	8/20	10	8/31				
Green Heron	1	5/28	1	6/17	1	8/31				
Cattle Egret	1	5/31	1	5/31	1	5/31				
Common Egret	2	6/7	3	8/20	1	8/28				
Black-crowned Night Heron	3	5/6	27	6/30	8	8/31				
American Bittern	1	5/4	1	6/21	1	6/21				
Virginia Rail	1	5/31	1	5/31	1	5/31				
Sora	3	5/31	15	6/17	2	8/31				
American Coot	3	5/3	345	8/31	345	8/31				
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	2	5/1	5	6/15	1	8/31				
Spotted Sandpiper	1	5/9	4	8/15	2	8/31				
Willet	2	5/1	2	5/1	1	7/19				
Lesser Yellowlegs	3	5/1	10	8/31	10	8/31				
American Avocet	2	5/1	2	5/1	2	5/1				
Herring Gull	1	5/1	2	5/21	2	5/21				
Ring-billed Gull	35	5/1	35	5/1	5	8/31				
Franklin's Gull	150	5/1	150	5/1	15	8/31				
Common Tern	2	5/5	10	8/15	5	8/31				
Black Tern	1	5/20	25	8/15	10	8/31				

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons:</u>									
Mourning dove	4	5/1	20	8/31	20	8/31			
White-winged dove									
IV. <u>Predaceous Birds:</u>									
Golden eagle									
Duck hawk	1	5/4	2	--	1	8/31			
Horned owl	1	5/11	3	8/8	1	8/31			
Magpie									
Raven	4	5/1	12	8/21	3	8/31			
Crow	1	5/4	1	8/8	1	8/8			
Sharp-shinned Hawk	1	5/15	1	5/15	1	7/3			
Cooper's Hawk	2	5/2	4	7/8	2	8/31			
Red-tailed Hawk	1	5/4	3	8/20	3	8/20			
Broad-winged Hawk	1	5/22	1	5/22	1	5/22			
Swainson's Hawk	1	5/7	1	8/20	1	8/20			
Marsh Hawk	2	5/1	2	5/1	2	5/1			
Osprey	3	8/2	3	8/2	1	8/31			
Sparrow Hawk	1	8/28	1	8/28	1	8/28			
Screech Owl									
Reported by <u>David E. Cooke</u>									

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1751

Form NR-
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)

Refuge Sullys Hill NGP

Months of September to December 1971.

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Western Grebe	3	9/1	10	10/1	2	11/8				
Pied-billed Grebe	5	9/1	10	9/15	1	10/21				
White Pelican	1	9/8	3	10/15	3	10/15				
Double-crested Cormorant	10	9/1	150	10/15	5	10/29				
Great Blue Heron	4	9/3	4	9/3	1	10/14				
Black-crowned Night Heron	8	9/1	8	9/1	3	10/7				
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	1	9/1	2	9/7	1	10/7				
Spotted Sandpiper	1	9/1	2	9/7	2	9/7				
Lesser Yellowlegs	25	9/1	35	9/21	3	10/30				
Greater Yellowlegs	5	9/1	10	9/21	10	9/21				
Ring-billed Gull	5	9/1	35	11/1	15	11/8				
Franklin's Gull	15	9/1	25	9/14	5	9/18				
Common Tern	3	9/1	5	9/14	1	9/22				
Black Tern	10	9/1	10	9/1	5	9/7				

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. <u>Doves and Pigeons:</u>										
Mourning dove	5	9/1	10	10/7	1	11/23				
White-winged dove										
IV. <u>Predaceous Birds:</u>										
Golden eagle	1	10/22	1	10/22	1	10/22				
Duck hawk										
Horned owl	2	9/1	2		2	12/31				
Magpie	6	9/1	25	11/5	6	12/31				
Raven										
Crow	10	9/1	200	10/3	2	12/31				
Sharp-shinned Hawk	1	9/10	1		1	10/28				
Red-tailed Hawk	2	9/1	6	10/28	2	11/8				
Rough-legged Hawk	2	11/4	2	11/14	1	11/15				
Swainson's Hawk	1	9/13	1	9/13	1	9/13				
Bald Eagle	1	10/18	4	11/9	1	11/27				
Marsh Hawk	1	11/8	1	11/8	1	11/8				
Reported by <u>David E. Cooke</u>										

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Sullys Hill NWP

For 12-month period ending August 31, 19 71

Reported by David E. Gooke

Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat		(3) Use-days *	(4) Breeding Population	(5) Production
	Type	Acreage			
	Crops	30	Ducks	29	15
	Upland	1,571	Geese	(Captive 21)	1
	Marsh	61	Swans	0	
	Water	12	Coots	10	12
	Total	1,674	Total	60	28

	Crops		Ducks	* Includes parts of Devils Lake no	
	Upland		Geese	longer censused as part of preserve	
	Marsh		Swans	Beginning in 1971 birds on Devils	
	Water		Coots	Lake proper are not censused.	
	Total		Total		

	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.
- (5) **Production:** Estimated total number of young raised to flight age.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Sullys Hill NHP

Months of January to April, 1971

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
		Acres Per Bird	Number broods observed	Estimated Total		Hunting	For Re- stocking	For Research		
Common Name	Cover types, total acreage of habitat				Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Total acres 1,674 750 acre of marsh and timber. Remainder is open pasture & hayland.								-	None observed and none believed present.
Sharp-tailed Grouse	"								30	2 wintering flocks
Gray Partridge	"								-	None observed

*Only columns applicable to the period covered should be used.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Sallys Hill NGP

Months of May to August, 19 71

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Total acres 1,674; 1,000 acres timber, 600 acres grass & hay, and 70 acres marsh.	837	0	0	50-50	0	0	0	2	1 pair observed in Unit II 7/16.
Sharp-tailed Grouse	"	49	3	24		0	0	0	34	Broods observed by permittee during haying in Unit II.
Gray Partridge	"	67	2	18		0	0	0	25	" " " "

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1752
Form NK-2
(April 1946)

UPLAND GAME BIRDS

Refuge Sullys Hill WGP

Months of September to December, 1971

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
		Acres Per Bird	Number broods observed	Estimated Total		Hunting	For Re- stocking	For Research		
Common Name	Cover types, total acreage of habitat				Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Total acres 1,674; 1,000 acres timber, 600 acres grass & hay, and 70 acres marsh.	--							--	None observed and none believed present.
Sharp-tailed Grouse	"	56							30	Small wintering flocks in both units.
Gray Partridge	"	112							15	None observed but probably 1 covey in Unit II.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio	
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease/UNKNOWN	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
American Bison	700 acre enclosure of timbered hills with approximately 250 acres grass.	9			9			2*				43	32	
Elk	"	7			8			2		1	Ft. Hobbars NWR	30	21	
White-tailed Deer	"	10(est)			4**		1	1	1			36	29***	

Remarks:

* Newborn calves.

** Donated to North Dakota School for the Deaf, Devils Lake, N. Dak.

*** Based on aerial count 11/3/71 and includes 7 deer in recreation
area that escaped from main enclosure.

Reported by David E. Goeke

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Sullys Hill NHP

Year ending April 30, 1971

(1) Species	(2) Density	(3) Removals	(4) Disposition of Furs								(5) Total Popula- tion		
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed
								Permit Number	Trappers Share	Refuge share			
Raccoon	1,674 acres timber and grassland.												10
Mink													15
Striped Skunk													10
Red Fox													170
Woodchuck													6
Gray Squirrel													100
Fox Squirrel													35
Cottontail													20
Snowshoe Hare													30
Pocket Gopher													2,000

List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

Reported by David E. Cooke

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
 - (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
 - (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
 - (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
 - (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

REPORT ON BIG-GAME ANIMALS

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Refuge: Sullys Hill NGP

Date: January 24, 1972

The following is a report on the changes which have occurred in the number of animals during the period from January 1, 1971 to January 1, 1972:

Losses and gains	Buffalo	Elk	Deer	Longhorns	Antelope	Sheep
TOTAL <u>Jan. 1</u> , 19 <u>71</u>	34	23	30**			
LOSSES - Dead:						
Natural causes	2		2			
Accidents						
Sales	9	8				
Donated			4			
Unknown		2				
LOSSES - Live:						
Gifts						
Sales						
GAINS:						
Births	9	7	10***			
Gifts						
Transfer		1*				
TOTAL <u>Jan 1</u> , 19 <u>72</u>	32	21	22(main enclosure)** 7(recreation area)			

REMARKS:

* Yearling elk bull transferred from Ft. Niobrara NWR.

** Estimate based on aerial census.

*** Estimate based on ground observations.

Signature: David E. Goeke

Title: Refuge Manager

DISEASE

Refuge Sullys Hill NGP.Year 1971

Botulism

Lead Poisoning or other Disease

Period of outbreak None

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks No cases of botulism observed.Kind of disease None

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks No sick animals observed.

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Sullys Hill NGP**

County **Benson**

State **North Dakota**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
NONE									
								Fallow Ag. Land.	30

No. of Permittees: **1** Agricultural Operations **1** Haying Operations **1** Grazing Operations **None**

Ref. Share

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	90	90	16	1. Cattle				
Alfalfa-Brome	50	80	24					
Alfalfa-Native	26	40	16					
Brome	30	43	8					
				2. Other				
				1. Total Refuge Acreage Under Cultivation				30
Hay - Wild	20	40	8	2. Acreage Cultivated as Service Operation				0

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

REFUGE GRAIN REPORT

Refuge Sullys Hill NHPMonths of January through December, 1971

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Barley	200	100	300			250	250	50		50	—
Oats	230	—	230			80	80	130		130	—
Corn	20	—	20			5	5	15		15	—
Wheat	—	250	250			150	150	100		100	—

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

Preserve Headquarters

(10) Remarks _____

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		NONE						

10. Summary of results (continue on reverse side, if necessary)

3-1750

Form NR-1

(Rev. March 1953)

W A T E R F O W LREFUGE Sullys Hill NGP.MONTHS OF September TO December, 19 71

(1) Species	Weeks of reporting period ⁽²⁾									
	9/1	9/8	9/15	9/22	9/29	10/6	10/13	10/20	10/27	11/3
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada										80(1da.
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard	45	95	45	80	25	25	80	150	225	125
Black		1								
Gadwall	25	10	8	12						
Baldpate	15									
Pintail	60	20	30	20	30	30	35	25		
Green-winged teal										
Blue-winged teal	160	100	55	30	9					
Cinnamon teal										
Shoveler	15	25	5	6			15			
Wood	40	40	25	16	5	7	3	3	3	3
Redhead	5	5	2	12	8	8	20	10	15	15
Ring-necked										
Canvasback										
Scaup							15	35	75	50
Goldeneye										1
Bufflehead							6	15	5	5
Ruddy					4	4	20	30	25	10
Other hooded Merganser										1
Coots	1100	370	15	18	14	18	20	15	5	2
<u>Coot:</u>										

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Sullys Hill NGP.MONTHS OF September TO December, 19 71

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods:Estimate seen : total
	11/10 11	11/7 12	11/24 13	12/1 14	12/8 15	12/15 16	12/28 17	12/29 18		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada									80	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	15	8							6,426	
Black									7	
Gadwall									385	
Baldpate									105	
Pintail									1,750	
Green-winged teal										
Blue-winged teal									2,478	
Cinnamon teal										
Shoveler									315	
Wood									1,015	
Redhead									700	
Ring-necked										
Canvasback										
Scaup									1,225	
Goldeneye									7	
Bufflehead									217	
Ruddy									651	
Other H. Merganser									7	
Coot:									11,039	

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans				Principal feeding areas Ft. Totten Bay of Devils Lake
Geese	80	80		and Sweetwater Lake.
Ducks	15,288	365		Principal nesting areas Unit I hay meadow and shore of
Coots	11,039	1,100		Sweetwater Lake
Reported by				David E. Goake

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Sullys Hill NGP

Months of September to December 1987

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Western Grebe	3	9/1	10	10/1	2	11/8				
Pied-billed Grebe	5	9/1	10	9/15	1	10/21				
White Pelican	1	9/8	3	10/15	3	10/15				
Double-crested Cormorant	10	9/1	150	10/15	5	10/29				
Great Blue Heron	4	9/3	4	9/3	1	10/14				
Black-crowned Night Heron	8	9/1	8	9/1	3	10/7				

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons:</u>									
Mourning dove	5	9/1	10	10/7	1	11/23			
White-winged dove									
IV. <u>Predaceous Birds:</u>									
Golden eagle	1	10/22	1	10/22	1	10/22			
Duck hawk									
Horned owl	2	9/1	22	---	2	12/31			
Magpie	6	9/1	25	11/5	6	12/31			
Raven									
Crow	10	9/1	200	10/3	2	12/31			
Sharp-shinned Hawk	1	9/10	1	---	1	10/28			
Red-tailed Hawk	2	9/1	6	10/28	2	11/8			
Rough-legged Hawk	2	11/4	2	11/14	1	11/15			
Swainson's Hawk	1	9/13	1	9/13	1	9/13			
Bald Eagle	1	10/18	4	11/9	1	11/27			
Marsh Hawk	1	11/8	1	11/8	1	11/8			
						Reported by David E. Goeke			

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Sullys Hill NGP

For 12-month period ending August 31, 1971

Reported by David E. Cooke

Title Refuge Manager

(1)	(2)	(3)	(4)	(5)
Area or Unit	Habitat		Breeding	
Designation	Type Acreage	Use-days *	Population	Production
	Crops 30	Ducks 344,759	29	15
	Upland 1,571	Geese 133	(Captive 21)	1
	Marsh 61	Swans 21	0	
	Water 12	Coots 14,511	10	12
	Total 1,674	Total 359,424	60	28

	Crops	Ducks	* Includes parts of Devils Lake no	
	Upland	Geese	longer censused as part of preserve	
	Marsh	Swans	Beginning in 1971 birds on Devils	
	Water	Coots	Lake proper are not censused.	
	Total	Total		

	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

(over)

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Sullys Hill NGP

Months of September to December, 19 71

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Total acres 1,674; 1,000 acres timber, 600 acres grass & hay, and 70 acres marsh.	--							--	None observed and none believed present.
Sharp-tailed Grouse	"	56							30	Small wintering flocks in both units.
Gray Partridge	"	112							15	None observed but probably 1 covey in Unit II.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Sullys Hill NGP

Calendar Year 1971

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio	
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease/Unknown	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
American Bison	700 acre enclosure of timbered hills with approximately 250 acres grass.	9			9			2*				43	32	
Elk	"	7			8			2		1	Ft. Niobrara NWR	30	21	
White-tailed Deer	"	10(est)			4**		1	1	1			36	29***	

Remarks:

* Newborn calves.

** Donated to North Dakota School for the Deaf, Devils Lake, N. Dak.

*** Based on aerial count 11/3/71 and includes 7 deer in recreation
area that escaped from main enclosure.

Reported by David E. Goeke

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Sullys Hill NHP

Year ending April 30, 1971

(1) Species	(2) Density		(3) Removals						(4) Disposition of Furs					(5) Total Popula- tion
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge share				
Raccoon	1,674 acres timber and grassland.													10
Mink	"													15
Striped Skunk	"													10
Red Fox	"													10
Woodchuck	"													6
Gray Squirrel	"													100
Fox Squirrel	"													35
Cottontail	"													20
Snowshoe Hare	"													30
Pocket Gopher	"													2,000

* List removals by Predator Animal Hunter

REMARKS:

Reported by David E. Greka

DISEASE

Refuge Sullys Hill NGP.Year 1971

Botulism

Period of outbreak None

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks No cases of botulism observed.

Lead Poisoning or other Disease

Kind of disease None

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks No sick animals observed.

CULTIVATED CROPS - HAYING - GRAZING

Refuge Sullys Hill NHP

County Benson

State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested Acres	Bu./ Tons	Unharvested Acres	Bu. /Tons			
NONE									
								Fallow Ag. Land.	30

No. of Permittees: Agricultural Operations 1 Haying Operations 1 Grazing Operations None

Ref. Share								
Hav - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	90	90	16	1. Cattle				
Alfalfa-Brome	50	80	24					
Alfalfa-Native	26	40	16					
Brome	30	43	8	2. Other				
				1. Total Refuge Acreage Under Cultivation				30
Hay - Wild	20	40	8	2. Acreage Cultivated as Service Operation				0

REFUGE GRAIN REPORT

Refuge Sullys Hill NGP

Months of January through December, 1971

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Barley	200	100	300			250	250	50		50	--
Oats	230	--	230			80	80	130		130	--
Corn	20	--	20			5	5	15		15	
Wheat	--	250	250			150	150	100		100	--

(8) Indicate shipping or collection points _____

(9) Grain is stored at Preserve Headquarters

(10) Remarks _____

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

Sullys Hill And Cavalry Square Top Lake Region Attractions



A herd of 41 buffalo roams the Sullys Hill Game Preserve today. Included in the herd are 34 adults and seven calves. When Sullys Hill became a big game preserve in 1914, buffalo were considered an endangered species. Where millions of these great beasts once roamed the high prairies, only small remnant herds remained. They disappeared from North Dakota in 1884 and by 1895, only 20 wild buffalo remained in the United States and 250 were left in Canada.

Scenery And History Go Hand-In-Hand

"Visit the scenic Lake Region area."

This has become a familiar slogan among public-spirited residents in and around Devils Lake. Many North Dakota residents, as well as out-of-state tourists, will be surprised to discover the many scenic spots along the shores of Devils Lake, as well as several historic points of interest in the area.

Two of the many tourist attractions are on the Fort Totten Indian Reservation. Here are located Sullys Hill National Game Preserve and Fort Totten Cavalry Square. Both are open to the public and provide opportunities to see, first hand, one of America's earliest Indian reservations and the area — Sullys Hill — which once was the base for military operations against the Sioux.

Sullys Hill National Game Preserve is located on the south shore of Devils Lake in the heart of the reservation. It is one of four fenced refuges maintained by the Bureau of Sport Fisheries and Wildlife for buffalo and elk. The preserve is divided into two parts — the original 994-acre big game unit with its 700-acre enclosure—and a newer 680-acre hay unit southwest of Fort Totten.

Wooded glacial moraine hills and native grasslands make

the big-game unit a picturesque home for buffalo, elk, white-tailed deer and other species of native wildlife. Here the visitor can drive the big-game auto tour route, use the picnic area and nature trails, see the waterfowl display flock and find other recreational opportunities.

Cavalry Square, the only one of its type remaining in its original pioneer state, offers much to history-seeking tourists and other visitors. The initial Fort Totten was established in 1867 and was one of a series of army posts for the protection of an overland route extending from southern Minnesota to western Montana. The fort was turned over to the North Dakota Historical Society in 1960 for preservation as a historical site.

The society, with the help of many Devils Lake residents, clubs and organizations, has cooperated in making this a tourist attraction which continues to draw more and more visitors each year from near and far.

Come with us then — if you will — on a pictorial tour of Sullys Hill and Cavalry Square. The tour, we hope, will give you a better insight as to what you'll see when you make the trip, yourself, to the area which is steeped in history.

Weekend Tour Is Suggested

Travelers interested in Indian history and culture should plan a weekend tour of North Dakota's Fort Totten area.

This is the location of one of America's earliest Indian reservations, established in 1867 and now home for more than 6,000 Sioux and Chippewas. At the center of the reservation is the cavalry square of old Fort Totten, still in its original state.

In one of the fort's buildings is found the Fort Totten Little Theatre, which each year produces a Broadway show.

The Lake Region Pioneer Daughters, an organization of descendants of the first settlers, have established a museum on the Square. Its large collections provide a good overview of territorial life. Nearby is a recently begun wildlife museum.

The State Art Gallery, with area paintings is located in one of the buildings at the fort. The gallery is operated by the Devils Lake Art Association.

Visitors can buy Indian clothing and curios hand-made by the Fort Totten Indians at a curio shop.

Near Fort Totten and on the heavily-wooded shores of Devils Lake, travelers can visit Sullys Hill Wildlife Preserve. Herds of buffalo, elk and deer roam within the preserve's confines. Picnic facilities are provided.

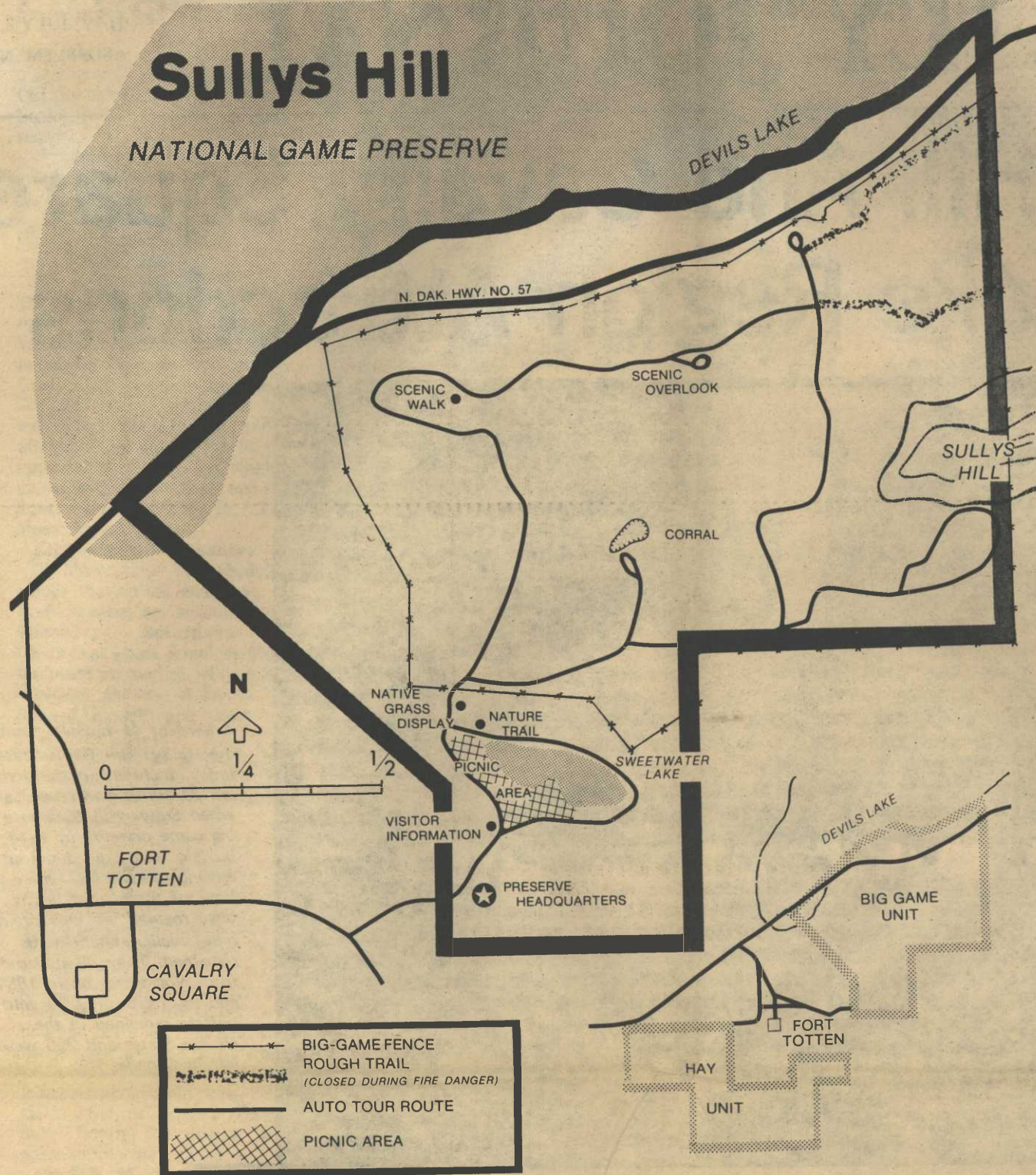
Directly east of Fort Totten lies St. Michael's Mission, established in pioneer days by Father Jerome Hunt. For the camera enthusiast, this area is one of the most photogenic sites in North Dakota.

Devil's Heart is the highest point in the Devils Lake area, originally named Chantee Hill — "heart of the region." This site was a favorite Indian camping ground, and like the early Chippewa scouts, tourists can glimpse a panorama of the entire region.

Devil's Tooth, a huge, grey-black boulder—is a site revered
(CONTINUED ON BACK PAGE)

Sullys Hill

NATIONAL GAME PRESERVE



New Look At Sullys Hill This Season

Sullys Hill National Game Preserve opened its 1971 season in May with a new look, according to Refuge Manager David Goeke.

Visitors this season will notice that many changes have taken place. A modern visitor comfort station and water system are now under construction and should be completed by mid-July.

An 88-foot-long waterfowl observation deck near the picnic area has been completed. Descriptive materials designed to teach waterfowl identification will be provided along the rail of the deck. The self-guiding hiking trail around Sweetwater Lake has been redesigned and is now in use.

New directional signs have been erected in Fort Totten, pointing out the way to Sullys Hill and to Cavalry Square. New entry signs into the Preserve have replaced the big white rock which had been in use for several seasons.

Visitors are reminded of several preserve regulations. The preserve will be open from 8 a.m. to sunset daily. Speed limit is 15 miles an hour and pets must be kept leashed. Motorcycles are not allowed in the big-game enclosure. The refuge manager asks people using the facilities to "please be considerate of other visitors and help us keep the preserve clean."

Approximately 42,400 persons visited Sullys Hill in 1970 and more than 60,000 are expected this season.

Third Cavalry Named Area

When Sullys Hill received its name in 1865, the last great buffalo herds still roamed this largely unsettled, dangerous country. A column of the 3rd Illinois Volunteer Cavalry was sent to join an army expedition led by General Alfred Sully against the Sioux of the area. Though failing to meet General Sully's force, the Illinois troopers camped nearby and gave the hill its present name.

Two years later, the Army established Fort Totten to protect the overland route between southern Minnesota and western Montana. Logs for the original fort and clay used for making the bricks of the present buildings came from Sullys Hill.

In 1904, Sullys Hill was set aside as a national park by proclamation of President Theodore Roosevelt. Ten years later, Congress established the big game preserve. In 1917, 15 elk arrived from Yellowstone National Park and four deer were brought here from the Fargo Agricultural Experiment Station. Six buffalo arrived the next year from the Portland, Oregon, City Park.

In 1931, Sullys Hill was transferred from the National Park System to the National Wildlife Refuge System. Since that time, preservation of the buffalo and elk has been assured and the preserve is now managed to stress outdoor education and wildlife-oriented recreation.



Susan and Billy McLellan, Devils Lake, chart their course on the map of the entry sign before going into the big game area of Sullys Hill National Game Preserve. Some 60,000 visitors are expected to use the park facilities during the current tourist season.

Game Preserve Expected To Draw 60,000

Public use of Sullys Hill National Game Preserve has shown a steady increase in recent years. In 1966, 12,000 visitors were counted at the park and this year Refuge Manager David E. Goeke estimates 60,000 people will visit and use the facilities.

The large increase being predicted is based on comparisons of visitors in May of last year and this year. Nearly 9,000 visitors used the facilities in May of this year, an increase of almost 80 per cent over the same month last year.

July is the largest month, attendance-wise, due to the Fourth of July holiday and Fort Totten Days. The long holiday weekend is expected to push this year's July attendance figure far above previous years. Fort Totten Days are scheduled for July 23, 24 and 25.

The attendance figures for the past five years:

1966 — 12,000.
1967 — 21,000.
1968 — 24,000.
1969 — 35,000.
1970 — 42,000.

NATURE TRAIL

A mile-long self-guiding nature trail for hikers begins and ends at the picnic area. Interpretive signs are provided at points of interest along the trail.



The original Cavalry Square buildings at Fort Totten are still intact. This portion of the Square shows the buildings which had been used as the barracks and mess hall. Fort Totten was initially established in 1867. Since 1960, the fort has been preserved as a historical site by the North Dakota Historical Society.



An outstanding wildlife exhibit is housed in this building at Fort Totten's Cavalry Square. Other original buildings of the fort's square also house many interesting tourist attractions. Cavalry Square, only one of its kind remaining in its original state, is in the center of the Devils Lake Sioux Indian reservation. It is open to the public free of charge.

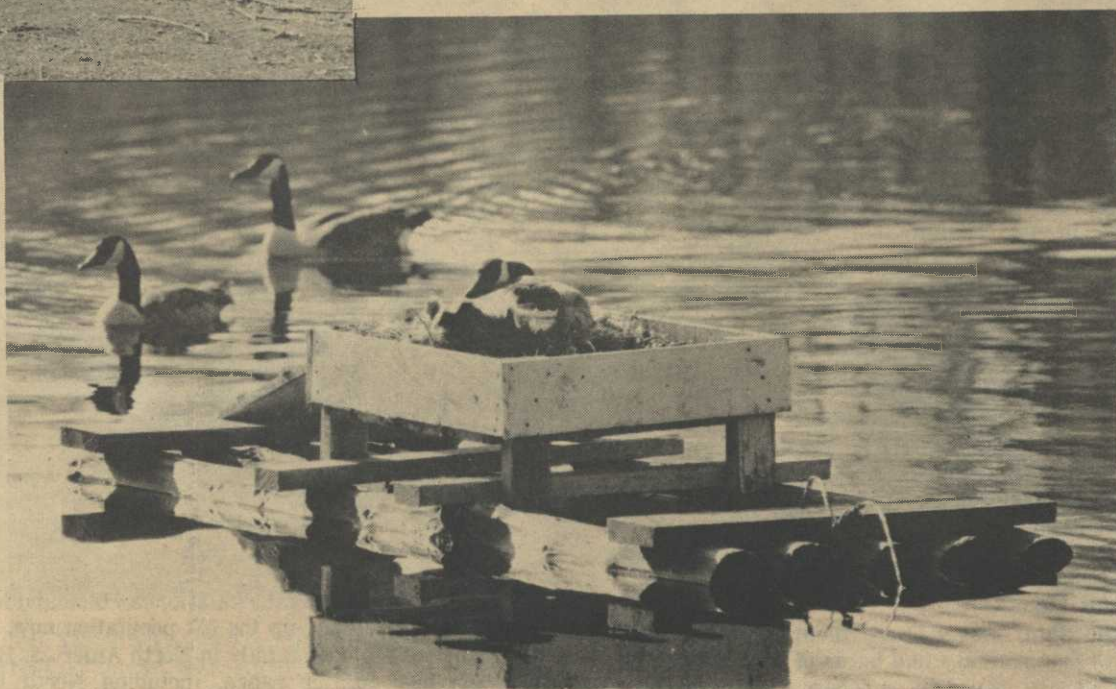


A lone swan has Sweetwater Lake in the preserve all to itself. The peaceful lake serves as a natural habitat for display flocks of native swan and geese. Included in the display flocks are 43 geese, three swan and one pelican. Observation areas and interpretive information are provided at Sweetwater Lake.



Sweetwater Lake

A display flock of native waterfowl species is located at Sweetwater Lake. This flock includes whistling swans, two races of Canada geese, blue and snow, white-fronted geese and several species of ducks. Top photo shows a flock of giant Canadian geese and bottom photo shows a goose nesting box, soon after a hatch. Many of the nesting boxes are in place on Sweetwater Lake within the preserve.



Illinois Native Refuge Manager

David E. Goeke is a city boy who is enjoying the country.

The 28-year-old Goeke, a native of Lockport, Ill., some 35 miles from Chicago, is manager of Sullys Hill National Game Preserve.

Goeke came to Sullys Hill in September of 1969 from Sherburne National Wildlife Refuge, Princeton, Minn., where he had been assistant manager. Since his arrival here, he has seen the visitor count rise steadily and has been involved in many improvement projects at the game preserve.

A wildlife management major, Goeke received his bachelor's

degree from Western Illinois University, Macomb, Ill., in 1964. He worked on his master's degree at Western Illinois and has completed all requirements, with the exception of writing his thesis. Goeke joined the Fish and Wildlife Service of the Bureau of Sport Fisheries and Wildlife in 1968. He is married to the former Audre Harris and they are the parents of a son, James Andrew, 1½.

Irvin Nelson, biological technician, is the only other full-time employee at Sullys Hill. He has been employed there for more than 20 years.



DAVID GOEKE



IRVIN NELSON



Excellent picnic facilities are available within the preserve. Drinking water, tables and barbecue grills are easily accessible on the southwest side of Sweetwater Lake. Fires are permitted only in the permanent fireplaces or in portable stoves or grills. Toilet facilities are also available.



Tourists are treated to an excellent view of Devils Lake at Stop No. 6 on the "Bison Trail." The lake's proper name is "Minnewaukan," meaning "Spirit Water." From a legend of the drowning of two hostile bands of Indians who met in its center, the Spirit was considered bad — hence Devils Lake. The Devils Lake area is an important staging or gathering area for migrating ducks, geese and whistling swans.



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Fort Established 104 Years Ago This Month

One hundred and four years ago this month a treaty between the United States Government and the Sisseton, Wahpeton and Cut-Head Sioux Indians was signed. As a result of this treaty, small bands of Indians began moving into the region of the then newly-established Fort Totten, Dakota Territory.

The new fort, established July 17, 1867, by General A.H. Terry, was to be one of a series of Army posts for the protection of an overland route extending from south Minnesota to the western portion of Montana—indeed the last outpost before 300 miles of native wilderness.

Fort Totten was named in honor of Brevet Major General Joseph Gilbert Totten, who had served as an engineer with the United States Army. The original fort was a temporary log structure built about 800 yards north of the present brick buildings, upon which construction began the following

year. Construction continued through the early 1870s and the clay brick was supplied from the brick kiln located at a point across the bay of Devils Lake. The kiln was closed after the construction of the fort.

The 1870 census reveals that in addition to the 65 soldiers and non-commissioned officers, one Army surgeon and 174 other persons at the fort, employees, laborers, hunters and others and their families; there were 69 children under 14 years of age. Of the 65 soldiers, 31 were of foreign birth. Of the civilians of the fort, about 25 per cent were of foreign birth.

An Indian Industrial School was established at Fort Totten under an act of Congress in October, 1890.

A new school has been built for the Indians, just east of the fort, and the fort was turned over to the North Dakota Historical Society by the Bureau of Indian Affairs for preservation as a historical site on Jan. 18, 1960.

Fort Totten-Sullys Hill Group Formed In 1960

Organized in April of 1960, the Fort Totten-Sullys Hill Association has cooperated with the State Historical Society in the development of Fort Totten and nearby Sullys Hill National Game Preserve.

It was in the same year that Cavalry Square at Fort Totten was dedicated as a state park. Transfer of the operation of the square was made from the bureau of Indian Affairs to the State Historical Society. Since that time, the Fort Totten-Sullys Hill Association has worked closely with the State Historical Society in developing the area as a historical and tourist attraction.

More than 3,500 people were on hand for the formal dedication of Fort Totten Cavalry Square as a

unit of the state park system June 6, 1960. The formal transfer of title to the square was completed by H. P. Mittelhultz, superintendent of the Belcourt Indian Agency, representing the Bureau of Indian Affairs, to Dana S. Wright, St. John historian, representing the State Historical Society. That day, the Pioneer Daughters museum drew 2,420 visitors.

Elected in June to head the organization for another year were Harold Kelly, president; Louis Goodhouse, vice president; Rev. J. Adin Mann, secretary, and David E. Goeke, Mrs. Everett Brash, Obert Tiegen, justice of the State Supreme Court, Bismarck, and Meyer Shark, Fargo, directors.



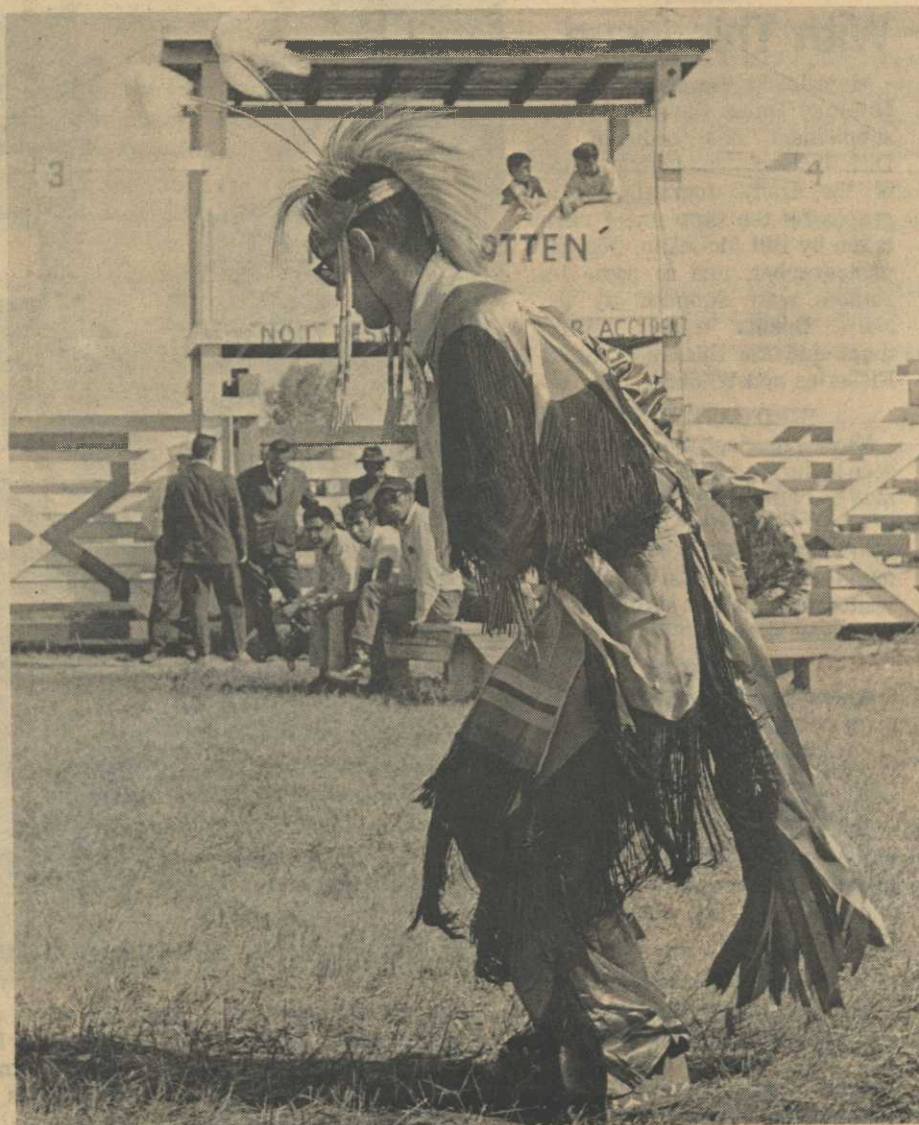
Camping is allowed at Fort Totten during the annual Fort Totten Days celebration. Some of the camping units, in attendance at previous celebrations, are shown here. State and national dignitaries have been frequent visitors at Fort Totten Days in the past.



Indian dancing is a unique tourist attraction at Fort Totten. The group above beat the tom-tom while a young "warrior" performs at bottom right. Indian dancing is a popular attraction for the annual Fort Totten Days celebration, scheduled this year for Friday, Saturday and Sunday, July 23, 24 and 25. Tourists and residents of nearby Devils Lake and other communities flock to the reservation to observe the dancing competition during Fort Totten Days.



Indians in their native garb are on hand each year for Fort Totten Days on the reservation. The Indians, in their battle dress, are vivid reminders of another era. They live today in the very same location where Cavalry troops once trained to fight the Sioux.



Little Theatre Popular Attraction At Cavalry Square

One of the more popular attractions at historical Fort Totten Cavalry Square is the Fort Totten Little Theatre, now in its ninth season.

Thaddeus Torp, assistant professor of speech and theatre at Central Connecticut State College, New Britain, Conn., is in his third season as director of the Fort Totten Little Theatre.

The ninth season for the Little Theatre opened July 1 with its main production, Meredith Willson's "The Music Man." Cast in leading roles are Pat Barko of Grafton, the librarian, and Dale Christopher of Grand Forks, the traveling salesman. An added attraction this season will be the appearance of two local singing quartets—the Four Dads and the Squires—performing in "The Music Man."

Eighteen performances of "The Music Man" are scheduled before the season ends Aug. 8. Performances are scheduled for Thursdays, Saturdays and Sundays at 8 p.m. Supplementing the main production will be two repertory shows—"A Doctor In Spite of Himself" and "Aladdin's Magical Lamp." The performances will be given Friday evenings at 8 p.m., beginning July 16, and Sundays at 1:30 p.m., beginning July 18.

Weekend Tour

(Continued From Front Page)

by the Indians. An old legend tells of an Indian woman who, by using her body as a shield against the freezing wind and snow, saved the life of her baby and lost her own. It is said that the mother's spirit of kindness lies hidden in the huge rock. Even today some Indian families leave gifts by the rock when a relative dies, hoping to insure safe passage into the beyond.

On U.S. 20, in Devils Lake, travelers can stop to tour the School for the Deaf. The school has an international reputation for its work.

Several Assist With This Issue

Material for this special Sullys Hill-Fort Totten Cavalry Square supplement was gathered by Dick Beranek, managing editor of the Daily Journal. Photographs for the supplement were taken by Bill McLellan, Journal photographer, and in some instances were supplied by the North Dakota Travel Department and the Bureau of Sport Fisheries and Wildlife.

BIRDWATCHING

Many species not normally seen in the open areas of the state may be found in Sullys Hill Game Preserve's wooded areas. You may obtain a checklist of birds found on the preserve at the visitor information station near the picnic area.

SOME RULES

When using the facilities of the preserve, camping and firearms of any kind are strictly forbidden. Dogs must be kept on a leash. From Nov. 1 to May 1, preserve roads will be open only as conditions permit. Roads will be closed for preserve operations and when ice and snow make them dangerous.

PHOTOGRAPHY

Excellent opportunities are available to photograph buffalo, elk, deer, waterfowl and other species of wildlife without interference from fences or cage bars.



Dale Christopher, cast in the title role of "The Music Man," has just presented the "kids" with musical instruments he managed to get the townspeople of River City to buy. Cast opposite Christopher in the other leading role is Pat Barko, who plays the part of the librarian. Performances of "The Music Man" will be presented Thursdays, Saturdays and Sundays at 8 p.m. through Aug. 8.

Pioneer Daughters Museum Packs 'Em In



Pioneer Daughters Mrs. Noel Tharalson (left) and Mrs. George Routier are getting things in readiness for another day at the Pioneer Daughters Historical Museum at Cavalry Square, Fort Totten. In 1936, the Daughters started the museum which was then housed in two log cabins, part of the original cavalry post. The museum is open from one to five p.m. every day Memorial Day through Labor Day. During productions at the Little Theatre, the hours are extended to 8 p.m.